

# ACCE News

Newsletter of the American College of Clinical Engineering

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## Special International Issue

This special issue takes a look at the many recent important international outreach activities conducted by ACCE and its members.

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## President's Message



For our international edition of the newsletter, I thought I'd quickly share with you a recent 'international' experience, one that confirms some of what you will see in this issue – that clinical engineering is a global profession and many of the challenges we face are similar in nature no matter what country we call our home. This week, I was in Alghero, Sardegna at a scientific meeting produced by the organization, SIAMOC (Società Italiana di Analisi del Movimento in Clinica – The Italian Society for Clinical Movement Analysis). What is unique about this group is that they founded themselves 10 years ago with the intent to bring clinicians and engineers together to confront issues in rehabilitation medicine. Since most physical therapy regimes are based strongly on biomechanical principles, clinicians in this field are already well versed in 'engineering-speak' and a group such as SIAMOC has the ability to exchange ideas relatively easily without having to sacrifice the technically-descriptive details. Before taking on this fellowship with the Robotic and Movement Analysis Laboratory at Bambino Gesù, I hadn't often had entire conversations where 'moments', 'ground reaction forces', and 'dampening constants' were key terms coming out of the mouths of the physical therapists. And so, it was a great pleasure to see the following picture emerge on the screen during a keynote session (Cappozzo, A. "Human Movement Analysis: Before and After the First SIAMOC Decade" presented at the 10th annual SIAMOC Meeting on Oct 1, 2009). The picture depicts a physician (they guy in the white coat) talking to an engineer, while the engineer is holding up the Leaning Tower of Pisa. What a pleasure to how much clinicians look to engineers like us to sustain the vast amount of technology used in the hospital! I wasn't able to get the slide from him in time to meet the newsletter's press deadline, so I did my best to recreate it.

And with that, I leave you to enjoy our very special international edition of the newsletter.



*Jennifer*

# ACCE Healthcare Technology Foundation News



Do you know a clinical engineer who demonstrates leadership excellence within their organization? Now is the time to nominate that person, or yourself! ACCE Healthcare Technology Foundation is accepting nominations for the Excellence in Clinical Engineering Leadership Program until the end of the year. We are looking for that individual who demonstrates best practices in broad institutional leadership in the management and advancement of healthcare technology in hospitals, outpatient facilities and home. These are the folks that go beyond the routine clinical engineering operations and have significant contributions towards their institution. We know you can think of someone worthy! Please go the Foundation website at [http://www.acce-htf.org/leadership\\_award.asp](http://www.acce-htf.org/leadership_award.asp) to learn more about this exciting opportunity and nominate today!

## Secretariat Services

The Foundation is in the process of looking to recruit a Secretariat replacement. Cheryl Shaw has been gracious to assist us for the past 3 years and as her children grow she is looking for work opportunities and the ability to take the CCE exam which means she can no longer perform the Secretariat duties for a period of time before she is allowed to apply for the exam. We are looking to fill this role by January 2010. Most of the work involved is with the Certification program and averages out to be around 15 hours per month. What a great way to stay connected with Foundation activities plus make a

little money. Please contact Jennifer Ott, [secretary@acce-htf.org](mailto:secretary@acce-htf.org), if you are interested

## Inaugural Medical Devices Connectivity Conference and Exhibition

Our own President, William Hyman, recently participated and presented a keynote address at The Center for Business Innovation's (TCBI) Inaugural Medical Devices Connectivity Conference and Exhibition in Boston. Steve Grimes from ACCE also participated. Our man on the street, Hank Stankiewicz, reported that both did an excellent job representing ACCE and ACCE Healthcare Technology Foundation. Hank was also kind enough to assist with our booth which was well received. The audience went well beyond clinical engineering and many vendors and IT folks appreciated the education and interaction with our group. Hank did a wonderful job explaining how we fit into the connectivity equation and encouraged them to seek us out where they were working. He emphasized to our group to continue to do the same on our side as well.

## Strategic Marketing Plan

Annual meetings are always grueling but so rewarding with what you can accomplish face-to-face. This is certainly no different for the Foundation. However, we are keeping that momen-

tum and working with one of our new board members, Mike Dashefsky, Vice President of Nihon Kohden America to take this to the next level. We look forward to sharing more information as this develops.

## Foundation Mailing List

If you are interested in staying connected with activities and announcements of the Foundation please go to our home page and join our mailing list. We will include you on future announcements and promise not to overload you.

## Donations

As always, remember that donations to the Foundation are always welcome, and they are tax deductible.

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	<b>Healthcare Technology Foundation</b>	ACCE Healthcare Technology Foundation (AHTF) 5200 Butler Pike Plymouth Meeting PA 19462 (610) 825-6067 <a href="http://www.accefoundation.org">http://www.accefoundation.org</a>
		AHTF is an independent, not-for-profit foundation

# Commentary: Not Just PM...More PM

Two recent device notices posted by the U.K's Medicines and Healthcare Regulatory products Agency (MHRA) offer interesting cases relevant to the ongoing (and perhaps everlasting) "to PM or not to PM" debate. MHRA notices are available by free e-mail subscription (1). They can be a useful adjunct to direct communications from medical device companies, as well as FDA provided recall information which is also available on-line and by free e-mail subscription (1). Here the traditional PM definition of Preventive Maintenance, or its more modern cousin Periodic Maintenance might be applicable.

Note that the topic of the December 17th ACCE Teleconference is "Evidence-Based Maintenance" which will be presented by Binseng Wang. The abstract for this presentation states that "Clinical engineering (CE) professionals have realized for some time that the "preventive maintenance" (PM) that they have been performing for many years is no longer able to prevent any failures, although some safety and performance inspections (SPIs) can help detect hidden and potential failures that affect patient safety".

The situations in the MHRA alerts both involve not only PM-like activities, but an increase in such activities over what was called for in the original equipment documentation. More PM clearly means greater cost, yet it appears that the customer is in effect being told to absorb that cost, either temporarily or permanently. Perhaps this is analogous to getting a letter from your vehicle manufacturer that says Dear Customer, we have determined that the wear of your engine is much greater than anticipated. Please add to your owner's manual our new instruction to change your oil weekly.

The first MHRA Field Safety Notice (2) concerned an Urgent Field Safety Notice from GE Healthcare with respect to

certain Innova x-ray systems with GE Flouro UPS 20KVA. The Safety Issue identified in the notice is that "The flouro UPS could potentially be unavailable if it is not periodically maintained as prescribed in the service documentation and Operator Manual supplied with the Innova system." A Safety Instruction is then given to "On a monthly basis please verify the flouro UPS functionality by turning off the mains power input and ensuring that fluoroscopy remains available." If this is a new instruction, as it seems to be, then a new monthly functional test is being called for. A Product Correction is also discussed consisting of a no cost inspection by GE, and the addition of preventive maintenance to GE maintenance coverage contracts. If not under contract the user is reminded to maintain the system "with a frequency in accordance with the GE service documentation and Operator Manual".

The Notice also notes that "As stated in the Operator Manual...the hospital should establish emergency workflow procedures to ensure patient safety should a component stop operating during a patient examination." This does not seem to me to be a common device instruction, yet it is quite consistent with some recent emphasis by The Joint Commission.

The second MHRA Field Safety Notice (3) concerns the Philips HeartStart MRx AED. In this case an Instructions for Use Addendum is provided which adds a new inspection after "every patient event where pads were used." This inspection is to include a review of paddle related timed events listed in the Event Summary. If present, or if paddle messages occur during an Operational Check, the device is to be taken out of service. In addition there are new instructions for a weekly inspection of the cable connector to assure that "the connector pins are clean, gold color and straight" and that the black gasket is in place and not

torn." In addition it must be confirmed that the corresponding contact holes are "clean and uniform in appearance." To be effective such inspections are clearly judgment calls based on some level of experience with both acceptable and unacceptable conditions. A table attached to the Addendum has an interesting set of Actions Planned By Phillips. These include: User inspection, Distribution of the revised addendum, and Repair of units confirmed to be exhibiting the problem. Note that the first two of these put the onus on the user to find a problem identified by the manufacturer.

Probably no one (or only a few) would argue that PM is never necessary. These two examples establish that, at least according to the manufacturer, not only is PM necessary, but even more PM than originally indicated is necessary.

To sign up for free e-mail subscriptions from:

MHRA see:

<http://www.mhra.gov.uk/Onlineservices/General/E-mailalertingservice/index.htm?formAction=actionRegistration>

[www.mhra.gov.uk/Safetyinformation/Safetywarningsalertsandrecalls/FieldSafetyNoticesformedicaldevices/CON057081](http://www.mhra.gov.uk/Safetyinformation/Safetywarningsalertsandrecalls/FieldSafetyNoticesformedicaldevices/CON057081)

[www.mhra.gov.uk/Safetyinformation/Safetywarningsalertsandrecalls/FieldSafetyNoticesformedicaldevices/CON057092](http://www.mhra.gov.uk/Safetyinformation/Safetywarningsalertsandrecalls/FieldSafetyNoticesformedicaldevices/CON057092)

FDA see:

[www.fda.gov/AboutFDA/ContactFDA/StayInformed/GetEmailUpdates/default.htm](http://www.fda.gov/AboutFDA/ContactFDA/StayInformed/GetEmailUpdates/default.htm)

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# International Report



## Highlights of WC2009 in Munich

The World Congress on Medical Physics and Biomedical Engineering in Munich was an excellent conference with emphasis on Medical Physics and Biomedical Engineering research. However there were some good Clinical Engineering presentations under the General Subjects Theme. There were 13 Themes and frequently 17 sessions running at the same time. Sessions ran from 8 am to 7 pm most days. There were about 3,000 presentations with presenters from all over the world.



World Congress participants enjoying Bavarian Night at the local beer hall.

Some sessions of special interest to Clinical Engineers were as follows:

- Technology Management in Developing Countries
- Round Table Innovations in Career Development Perspectives for Educational Policy
- Beyond Drugs and Devices: The Changing Role of Medical Engineering
- Health Technology Assessment and Economics
- Biomedical Engineering in Preventive Healthcare & Public Health
- Technology Enhanced Education
- BME Education and Training – International
- Accreditation and Certification in BME and Medical Physics
- Health Technology and Patient Safety

There was considerable discussion about certification for medical physics and clinical engineers including some proposals

that it should be a combined certification program under medical physics.

Highlights of the Congress were the Opening Ceremony with a presentation by Roger Y. Tsien, Nobel Laureate in Chemistry 2008, Innovation at Night with awards and Bavaria at Night. The Bavaria at Night was the conference dinner held at Lowenbraukeller Festival Hall with about 1,000 attendees. The food and the beer were superb in this historic beer hall.

WHO, Department of Essential Health Technologies announced a Call for Innovative Technologies that Address Global Health Concerns at the Congress. Information and applications for this can be found at [http://www.who.int/medical\\_devices](http://www.who.int/medical_devices)

The deadline for applications is January 31, 2010.

The Clinical Engineering Division (CED) of the IFMBE met on Friday afternoon at the same time as most of the certification discussions so the key clinical engineers missed the certification discussions. The CED meeting included some members attended by web meeting. Yadin David was elected chairman of the CED. The CED put forth some goals to bring new life into the organization. The Dr. Herbert Voigt the new president and Ratko Magjarevic, president-elect of IFMBE attended most of the meeting and expressed their support for an active CED. The CED established the following three working groups: #1 Professional Practice & Education, #2 Standards and Guidelines, and #3 Strategic Development & Communications.

James Wear

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## International Report Continued

### Report on a Health Technology Management Workshop in Ghana

On June 22 – 24, 2009, the second in a series of four workshops on Health Technology Management was presented in the Government Training Centre in Madina, Greater Accra, Ghana. The workshop was made possible by the joint sponsorship of International Aid, The Ghana Health Service (GHS), the Ghana Ministry of Health (MOH), ACCE, and the World Health Organization (WHO). The workshop was also made possible by the generosity of a donor to International Aid by the name of Dr. William Bolthouse.

The following faculty from ACCE participated in the workshop: Bill Gentles of BT Medical Technology Consulting in Toronto and Mario Ramirez of Hospital for Sick Children in Toronto. One additional faculty who participated was Billy Teninty from International Aid.

There were 83 registrants at the workshop. The e-RegisterNow online registration facility was provided, compliments of the Clinical Engineering Society of Ontario.

A principal focus of this workshop was to provide hands-on training in the VHTemp database software that has been officially adopted by Ghana as its medical equipment database.

VHTemp is an equipment management software package that is being made available at no charge to developing countries by WHO. It is supported by the developer, Wamsys ([www.wamsys.co.za](http://www.wamsys.co.za)).

In addition to VHTemp training, the following topics related to Health Technology Management were presented: Intro-

duction to Database Concepts – Bill Gentles; Establishing a Risk Classification–Mario Ramirez; Establishing a PM Schedule – Mario Ramirez; PM procedures –sources of information – Bill Gentles; Managing the Fleet of Autoclaves (steam sterilizers) in Ghana –Bill Gentles and Billy Teninty; Best practices in Ghana – Ghana presenters James Baddeu – Komfo Anokye Teaching Hospital, John Zienaa – Ashanti Regional Clinical Engineering Unit; Donations policy –Mr Brobbey, Ghana Ministry of Health; Donation of equipment - Issues and solutions, Government policies - Billy Teninty & Mario Ramirez.

At the end of each day of formal presentations, a period of 90 minutes was set aside for review and discussion, to get feedback from participants, and to ensure that the presentations were meeting their needs. This component was seen as an important element of the workshop, but created extra work for the faculty, as the schedule for each successive day was fine tuned in the evening, based on the feedback from participants. One result of this fine-tuning

was that the time allotted to VHTemp training was greatly expanded, and several planned presentations were removed from the program to make more time available for the VHTemp training.

After the three-day workshop, the faculty conducted two days of hospital site visits, to get a better understanding of the problems faced in HTM management.

Common issues for Clinical Engineering services among all hospitals, were:

- Lack of tools and test equipment
- Availability of spare parts
- Technical Training
- Knowledge of terms of purchasing contracts
- Not enough user training

The observations and recommendations made by those interviewed will help in planning the next two follow up workshops.

Feedback from registrants indicates that the workshop was considered a success, *(Continued on page 6)*



From L to R: Billy Teninty, Mario Ramirez and Bill Gentles in African shirts.

## Ghana Workshop

(Continued from page 5)

but much work remains to be done to raise the level of Health Technology Management in Ghana. The following are our recommendations:

- a) Many more hours of hands on VHTemp training are required.
- b) Clinical engineering services in Ghana are struggling with many challenges. A lack of training, as well as inadequate tools and test equipment were identified as key issues. Future workshops should address ways to correct these issues.
- c) Availability of spare parts is repeatedly raised as an issue in Ghana. This topic was deleted at the last minute from the June workshop to allow more time for VHTemp training. It urgently needs to be addressed in future workshops.
- d) There is clearly a lack of communication between government policy



Workshop Faculty Mario Ramirez, (right), and John Zienaa, of the Ghana Health Service, at the Eastern Regional Hospital in Koforidua.

makers and stakeholders affected by policies. This indicates a need for future workshops to include content for government policy makers.

e) Future workshops should incorporate topics relevant to government policy makers, such as:

- Contract negotiations
- Planning and design of facilities
- How to get value for the money invested in the Clinical Engineering service

- The role of Clinical Engineering in policy development.

We were most grateful for the kind hospitality of John Zienaa, of the Ghana Health Service. We would also like to thank Billy Teninty of International Aid, who made sure that everything ran smoothly. We look forward to continuing this work in the near future.

Bill Gentles

Mario Ramirez.

## New ACCE Members from Ethiopia

The following 22 clinical engineering professionals from Ethiopia are now members of ACCE thanks to the ORBIS sponsorship program for international memberships:

- Zeleke Ayalew Baychekn, Individual
- Yidnekachew Denbel Sala BSc, Candidate
- Wudu Ayalew Melaku, Individual
- Wondaferash Million BSc, Individual
- Tilahun Assefa Dimissie MSc, Individual
- Tsehaye Mesfin, Associate
- Tesfaye Wolde Aregay MSc, Individual
- Tekle Feleha, Candidate
- Taye Tessema BA, Associate
- Tamrat Cherenet, Individual
- Sisay Ayele Jibat, Associate
- Mulugeta Amena Mideksa, Individual
- Ibrahim Seid Burhan, Associate
- Gizachew Teshome Beyene, Candidate
- Getahun Mekoya Bizabih, Associate
- Fisseha Korma Wodajo BSEE, Individual
- Berhanu Gizaw H. Mariam, Dr. Eng, Associate
- Demeke Bitew Temaneh MSc, Associate
- Demeru Yeshitla, BSc MA, Associate
- Dereje Girma Birru BSEE, Associate
- Debebe Bogale Dargie, Candidate
- Berhane Hailemariam Asress MSEE, Individual

A warm welcome to our new members from Ethiopia!

Ismael Cordero

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# International Report Continued

## Notes from HTM East Africa Phase 2

“They” come from places like Nyeri, Kenya on the slopes of Mount Kenya, at over 17,000 feet, the second tallest peak on the continent and amazingly located at the equator.

Or they come from places like Kampala near Lake Victoria – where one HTM colleague said: “We Ugandans can become lazy ... because everywhere we throw seeds on the ground here – plants and vegetables spring up almost overnight!”

In the face of this African majesty, beauty, and plenty, is incredible poverty, recent war, and tremendous healthcare challenges.

“They” are six East Africans who were among 70 countrymen and women who participated in Phase 1 of the GAME – WHO – Association of Medical Equipment of Kenya (AMEK) East Africa Health Technology Management (HTM) training in Tanzania and Kenya in February this year. That “Phase 1” program is described in the International Report: Stronger HTM in East Africa, in the Volume 19 Issue 2 March / April 2009 issue of ACCE News.

### Imaging Support Training

This time, the East Africans have come to the USA ... groups of two from each of the three participating countries Kenya, Uganda, and Tanzania. They represent those individuals that the GAME Imaging equipment faculty led Joe Geary of DITEC deemed “most likely to succeed.” That is, most likely to be able to receive advanced imaging maintenance training, and to be able to go back to their countries and work together with their Ministries of Health HTM teams to implement imaging equipment support as well as teach many others what they had learned.

DITEC, in Solon, Ohio – and CEO Manny Roman – invited the two groups of 3 to come for seven weeks of imaging maintenance training courses, for the cost of

course materials only. One of the attendees, Jackson Ndambiri noted that:

“The challenges on day-to-day repair of imaging equipment motivated me to look for more knowledge to better serve my healthcare delivery system. I have been working in the medical engineering department for the last 18 years as a senior technologist.”

“The main challenges are the lack of tools and test equipment, older unreliable equipment, and poor funding for spare parts (when parts are available). Kenya is a beautiful, peaceful country with very friendly people, good tourist attraction sights, a variety of wild animals and very nice weather. This is a place you visit once and you will always want to come back a second time. Thank you for giving a chance to study in America!”

Trainees who work in the public health sector must commit to remaining in the public sector for at least 3 years to ensure their country receives the benefit of their participation.

### Imaging Test Equipment

The GAME (Global Assistance for Medical Equipment) [www.global-medicequipment.org](http://www.global-medicequipment.org) team, led by Dr. Jim Wear, George Johnston and Tom Judd, have continued to dialog with our medical engineering leader partners in East Africa since the February 2009 training re appropriate next steps. The more intensive imaging training is one major step; another major step involves providing the countries with imaging test equipment to assure their training can be put to use.

DITEC & Southeastern Biomedical are seeking donated Imaging and Biomed test equipment; currently they are seeking at least 2 more MoH sets (see sidebar)

### Source for Repair Parts

This is an issue under discussion. How can spare parts for imaging, lab, and biomedical equipment be provided to the East Africa MoHs and relevant private healthcare systems



View of Mount Kenya and Kenyan flag

in a cost-effective and timely manner? GAME will partner with others to find solutions for this very challenging problem.

### Other HTM Steps

Two promising connections that GAME is exploring are with the TriMedX Foundation (TF) ([www.trimedxfoundation.org](http://www.trimedxfoundation.org)) and CDC. There have been preliminary conversations with TF about their involvement in East Africa, and how we might partner together there. The GAME team noted the presence of the USA Centers for Disease Control (CDC) throughout East Africa, typically next door to the regional or district hospitals, providing HIV-AIDS measurement and support services as part of the USA PEPFAR programs ([www.pepfar.gov](http://www.pepfar.gov)).

GAME has been seeking East Africa connections with CDC in Kenya and Tanzania through MoH and WHO partners there, seeking a more timely, more cost-effective methodology for getting repair parts for Lab, as well as Imaging and Biomedical equipment, through this potential channel. Here is an example of the dialog GAME has been having with CDC in Tanzania:

*1. Who is Global Assistance for Medical Equipment (GAME); what are our areas of expertise?*

GAME can provide health technology management and maintenance expertise for (probably) any of the medical device systems in the public (or private) health system in Tanzania. Since GAME is a voluntary coalition of global medical device experts, there

*(Continued on page 8)*



# International Report Continued

## Notes from HTM East Africa Phase 2

(Continued from page 7)

may need to be a 30-60 day lead time before the training to assure the best possible trainers and training material content.

Examples are what was provided for Lab, Imaging, and ICU/Surgery in February 2009 in partnership with AMEK and WHO.

Several GAME voluntary experts in partnership with WHO and as part of the American College of Clinical Engineering faculty team (ACCE <http://www.acenet.org/default.asp?page=about&section=international>), have provided over 40 health leader one-week health technology management training seminars for 75 developing countries since 1991.

### 2. What can GAME offer to the Health Care Technical Services Tanzania?

GAME can provide web training for HCTS Tanzania on any of the above provided a reliable, high speed Internet connection can be provided in Tanzania for video streaming and or real time screen sharing can be used over the web (via web meeting) to teach. On-site training requires sponsorship to pay faculty and attendee expenses as GAME has no specific funding ready to be utilized, e.g., project specific funding is found as needed.

### 3. Which services require payments from CDC and how much?

Payment is not required from CDC. Partnership is desired with CDC and MoH Tanzania regarding joint equipment maintenance and management training, and back-up for one another on high technology clinical laboratory equipment. GAME desires to use CDC's equipment support mechanisms, eg acquisition and sending of parts and supplies to Tanzania from sources outside of the country, to assist other MoH priority equipment support and repair needs. This is a sorely needed gap

to fill for MoH.

### 4. Where are your offices in East Africa and all details that can allow one to communicate?

GAME leadership is located in Atlanta, Georgia USA near the CDC international headquarters. GAME has no EA offices in East Africa, however, you can communicate through various contacts:

AMEK in Nairobi with whom we partnered for the February 2009 training

Directly to Ministry of Health Tanzania

Through ORBIS ([www.orbis.org](http://www.orbis.org)) and their partner Dar es Salaam Institute of Technology (DIT)

Via Dr. Ephata Kaaya, Director of Continuing Education and Professional Development at MUHAS ([www.much.ac.tz](http://www.much.ac.tz))

The WHO country representative offices in Tanzania, through whom we also partnered in February 2009.

Dr. Kaaya is involved in the current programs around training of lab/medical equipment technicians at MUHAS. He is co-principal investigator on a project with University of California San Francisco (UCSF) with which GAME has linkages. GAME is segunded for US non-profit status (NGO status) to MedShare International ([www.medshare.org](http://www.medshare.org)), also headquartered in Atlanta, Georgia USA. MedShare has provided high quality donated medical equipment and supplies to 80 developing countries since 1998.

### 5. Equipment spare parts

CDC Tanzania has different types of laboratory equipment needing spare parts, but there is a need to identify commonly used spare parts for stock and those which are rarely used and only a few of them need to be kept in stock. GAME faculty from February 2009 will work with MoH and CDC to identify the required spare parts for the different systems, flow cytometry, hematology and chemistry analyzers.

### 6. Human Resource (Training of Engineers and Technicians)

## Needed Test Equipment- Please Donate if Possible!

### Imaging

- Storage Oscilloscope, TEKTRONIX TD 100<sup>2</sup>B
- Digital X-ray Timer, 07-457, Rad. Check plus 06-526
- Digital mAs Meter, 07-477
- Digital mAs Meter, 07-472
- Digital kVp Meter II, 07-473
- Non-Invasive X-ray Test Device, 400M+
- Radiation Measurement Set:: Dosimeter 35050A; Digital mAs Meter; 35080A kVp Divider; Calibration (BwH); 37617C W-R Filter Pack; 32863C Test Pack; IVIAM 25-30 kVp; Aluminum Filter- KEITHLEY

### Biomedical

- ECG Simulator Fogg (Qty:4)
- ESU Analyzer, Dynatech
- ECG/NIBP Analyzer, Pronk
- Pulse Oximeter Analyzer, Pronk
- ECG Simulator, Pronk
- Oscilloscope, Tektronix
- Power Supply, Tektronix

Tanzania is faced by shortage of biomedical engineering staff, so a comprehensive training plan is required which will ensure sufficient trained staff by phases. Training emphasis may involve those in the field, but additional staff training is also necessary. By working with MoH, DIT, MUHAS, etc., a comprehensive plan can rapidly be developed and implemented.

### 7. Workshop working tools

Even with the present staff, CDC Tanzania still lacks sufficient working tools and test

(Continued on page 9)





# International Report Continued

## Notes from HTM East Africa Phase 2

(Continued from page 8)

equipment, so plans are required for the identification of required tools and a system be in place for replacement of the same. GAME faculty from February 2009 will work with MoH and CDC to identify the required working tools and test equipment for the different laboratory systems involved. GAME faculty and other experts involved identified typical test equipment prior to February 2009. Other resources can help, such as WHO Maintenance Manual for Laboratory Equipment, 2008, and DITEC Fundamentals of Servicing Lab Equipment, 2009.

### 8. Equipment User training.

Most equipment breakdown are due to untrained users so a system is required that will ensure that for every new equipment there must be User training. As a starting point, users must be trained for the present equipment. The manuals noted above are excellent with pictures and text to support user training. These documents are on the memory stick provided to all participants in the February training.

### 9. Unstable power supply for lab equipment

A system must be devised that will ensure very stable electricity supply. A system is necessary that suggests whether centralized or decentralized system is the appropriate. GAME will assist CDC and MoH in these determinations and assist in identifying appropriate solutions.

### 10. Equipment calibration

One of the major problems that face the operation is the accuracy of results due to poor or no calibrations. The manuals noted above are excellent with pictures and text to support appropriate calibration training. To achieve necessary Quality Controls (QC) on an often daily basis, GAME will help identify required consumables.

## Spotlight on Phase 2 Imaging Training Participant

I am Yohana K. Mkwizu, the National Health Care Technical Services (HCTS) Coordinator. I am working with the Ministry of Health and Social Welfare (MOHSW). Among my main duties is to plan, execute and supervise maintenance services for medical equipment in Tanzania. My country is divided in 21 administrative regions, and each region is divided is also divided in Districts. Each Region has a Regional referral hospital and each District has a District hospital with some Health Centers and Dispensaries below it. Besides the above, the health system has in place specialized hospitals located in Zones and it is within these zones where the Zonal Medical Equipment Maintenance workshops are situated. So far we have four Zonal (specialized) hospitals, one of which is also the National hospital.

As a National HCTS Coordinator I conduct a lot of training in the maintenance of medical equipment country-wide. I also did a course in the installation, basic repair and maintenance of radiology equipment and I thought with this course I will be more able to disseminate the knowledge to all concerned.

I started working with medical equipment maintenance in 1979. The first 5 years I worked with one of the specialized hospitals as a Technician responsible for maintenance of all mechanical plants and installations. Later took a job as an Engineer responsible with repair and maintenance of medical equipment in all church hospitals in Tanzania. I started from a scratch and managed to establish maintenance system which is still working to date. I then joined GTZ ([www.gtz.de/en](http://www.gtz.de/en)) as a regional HCTS Coordinator with the responsibility of establishing maintenance system for one of the Regions with 8 districts and one regional hospital. The system in this region is now used as an example to the rest of the regions in the country, i.e., to establish regional maintenance system that starts from the district up the region with basic maintenance workshops in every district, and a referral workshop at regional level. After that I joined the Center for Diseases Control and Prevention (CDC) based in Tanzania and was placed in the MOHSW where I work until now.

Come join me in Tanzania! Tanzania is commonly known for her hospitality to visitors built on pillars of good governance that made the country peaceful and attractive. This country is also famous for Kilimanjaro Mountain (the roof of Africa), and the biggest national park in the world – the Serengeti National Park with the biggest animal concentration at the Ngorongoro Crater. With all these and more I want to take this opportunity to welcome all Well Wishers to this beautiful country.

### 11. Equipment vendors' limited capacity

The vendor's maintenance staff are far from adequate, as a result laboratory services are many times impaired. That is the reason GAME is recommending this partnership, to assist MoH and CDC in overcoming this obstacle.

### 12. Inconsistent supply of reagents and commodities

Sometimes reagents and supplies are found to be lacking and services come to a halt. It may be due to lack of knowledge in rate of quantification of supplies. GAME will assist CDC and MoH in identifying required reagents and com-

modities. CDC should have the appropriate supply chain, once these items are identified, to meet this need.

### 13. Contract Management

GAME provided management training specifically for this issue in the February training, and will continue to advise on best practices for this topic.

GAME Contacts:

Tom Judd, GAME Co-Leader,  
[judd.tom@gmail.com](mailto:judd.tom@gmail.com)

Dr. Jim Wear, GAME Co-Leader,  
[james.wear@gmail.com](mailto:james.wear@gmail.com)

## Healthcare Technology Management Workshop in Malawi

I recently had the unique opportunity to work with clinical engineering counterparts from South Africa to help develop healthcare technology management (HTM) in Malawi. On September 22-24 an HTM workshop was conducted in Lilongwe, Malawi and was attended by 42 district health managers and health professionals

This workshop was a collaborative effort between the Tshwane University of Technology (TUT) of South Africa, the University of Cape Town (UCT) in South Africa, the Japan International Cooperation Agency (JICA), the Physical Assets Division (PAM) of the Ministry of Health of Malawi, and managed by Medpal Wellness Promotion and Training of South Africa.

The faculty for the workshop consisted of Baset Khalaf, TUT, South Africa; Rob Dickinson, HT consultant- University of Cape Town, South Africa; Terry Downes, National DOH, South Africa; and Ismael Cordero, ORBIS.

The workshop's purpose was to contribute to the development and strengthening of institutional capacity (capacity building), promote the proper planning and management of technology in health service delivery and explore technical support/ service options for healthcare facility physical infrastructure and equipment.

The following were some of the key HTM topics that were covered:

- Medical Equipment Replace-



ACCE member Ismael Cordero (center) with workshop faculty and participants.

- Health Technology Assessment
- Health Technology Acquisition
- Human Resource Management
- Risk Management
- Performance Indicators
- Asset Management
- Development of a Clinical Engineering Department

The seminar included readings, teamwork, and forums for discussion. Attendees presented case studies in:

- Healthcare technology planning and assessment
- Healthcare technology acquisition
- Healthcare technology management and maintenance
- Quality, safety and risk management
- Medical Equipment Audit

The workshop reminded me very

much of ACCE's Advanced Clinical Engineering Workshops (ACEWs), and I believe that an ACEW conducted in Mombasa, Kenya in 2006 formed much of the basis for the format and content of this workshop. This speaks volumes of the global influence that ACCE has had with its ACEWs.

Although Malawi is one of the poorest countries' in the world (its public health system depends on donations for about 80% of its medical equipment and consumables) I found that the workshop participants quickly picked up the concepts and best practices presented by the faculty and they clearly demonstrated an optimism and creativity for facing the many challenges they have.

I look forward to working again with my new friends and colleagues from South Africa to further help develop HTM in the African continent.

Ismael Cordero

[ismael.cordero@orbis.org](mailto:ismael.cordero@orbis.org)



# International Report Continued

## First Advanced Clinical Engineering Workshop in India

ACCE is conducting the first Advanced Clinical Engineering Workshop (ACEW) for India. This will take place in the city of Thiruvananthapuram in Kerala State in the South of India from October 5 –10 and is being organized together with the Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST) [www.sctimst.ac.in](http://www.sctimst.ac.in)



The following ACCE members will participate as US faculty for the workshop, alongside with faculty counterparts from India:

- Binseng Wang, ARAMARK Healthcare Clinical Technology Services

- Joseph F. Dyro, President of the Biomedical Resource Group
- Thomas Bauld, National Center for Patient Safety, Veterans Health Administration
- Tobey Clark, University of Vermont

- Steven Grimes, Technology in Medicine, Inc.
- Bhavesh Patel, Washington Hospital Center

For more information on this workshop please visit <http://www.acew-india.in/index.htm>

We wish our fellow members a safe trip and we hope that the workshop is a success. We will be publishing a detailed report on the workshop in the next issue of *ACCE News*.

Ismael Cordero

[ismael.cordero@orbis.org](mailto:ismael.cordero@orbis.org)

## Nominate a Colleague for the ACCE/HIMSS Excellence in Clinical Engineering and Information Technology Synergies Award- *All Nominations must be submitted by October 30<sup>th</sup>*

The recipient of the Excellence in Clinical Engineering and Information Technology Synergies Award will be selected jointly by the Boards of Directors of the American College of Clinical Engineering (ACCE) and the Healthcare Information and Management Systems Society (HIMSS). The award will be presented to one or more individuals, who in the opinion of the joint Boards of Directors, has best demonstrated leadership in promoting or implementing significant synergies between the clinical engineering and information technology professions. These contributions may be of a professional or technical nature, and may include research or development of a new process or product, a paper of significance, or 'trailblazing' work in a new application of clinical engineering and information technology. The award may be made to an individual from the clinical engineering or information technology professions or may be shared between two individuals from the clinical

engineering and information technology professions who have cooperated in their efforts.

### General Eligibility Criteria:

1. Is a member in good standing of ACCE and HIMSS
2. Has participated in either professional or organizational activities as a member of ACCE or as a member of HIMSS.
3. Has demonstrated leadership in promoting or implementing significant synergies between the clinical engineering and information technology professions
4. Has advanced the professional standards embraced by ACCE and HIMSS.
5. Is currently not serving on the Board of Directors for ACCE or HIMSS.

In addition to the completed nomination

form, the following items must be supplied for each candidate in order for them to be considered the Award:

- A current resume or biographical profile
- A letter of recommendation in support of candidate's nomination for the Award
- A description of how the applicant meets the following Award criteria:
  1. Has demonstrated innovative and effective synergies in the application of clinical engineering and information management systems technologies in support of the strategic initiatives of his/her organization
  2. Has advanced the professional standards embraced by ACCE and HIMSS

To make a nomination please visit:

<https://www.confmanager.com/main.cfm?cid=1046>

# Clinical Engineering & CCE Review Course

The Clinical Engineering & CCE Review Course will provide an overview of the 2010 CCE examination topics which is based on the Clinical Engineering Body of Knowledge (BOK) survey conducted recently. This course is designed and presented by a group of experienced certified clinical engineers.



The course will help identify areas in which you need further review and help in preparing for the CCE examination. It will provide an opportunity to meet other candidates to form study groups.

**A Testimonial From a Past Participant:**  
"I wanted to thank the staff that prepared the Clinical Engineering and CCE Review Course and the entire excellent faculty that participated on it. As a Clinical Engineer that worked most of his life out of this country I felt I needed some help to get ready in certain areas for the CCE exam. The CCE Review Course met my expectations and gave me a lot of tools I used to get an excellent score on the written test. During the course I became familiar with the type of questions I would get in the oral test and this made me more comfortable with this demanding examination. During the course you will get a current outlook of where our profession stands and you will be able to network with colleagues that are experts in many different areas. I strongly recommend all clinical engineers to become certified and benefit from this great course to prepare yourself for the exam. Good Luck."

Ignacio Ortega-Alvarez, PE, MS, CBET  
Account Manager, DESCO Medical, FL

## Course Outline

- Introduction to the CCE Exam
- Technology Management
- Service Delivery Management

- Product Development, Testing, Evaluation, and Modification
- Information Technology (IT)/ Telecommunications
- Education
- Facilities Management
- Risk Management/Safety
- General Management
- Miscellaneous Clinical Engineering topics
- Mock written exam
- Mock oral exam

## Course Materials

The course materials include power point presentations, mock written exam questions, and sample questions for the oral exam and suggested references for further study.

## Faculty

Robyn Frick, CCE  
Manager, Clinical Engineering  
Eastern Maine Medical Center  
Bangor, ME

Frank R. Painter, MS, CCE  
Director, Clinical Engineering Program  
University of Connecticut  
Storrs, CT

Arif Subhan, MS, CCE  
Senior Clinical Engineer  
Masterplan, Chatsworth, CA  
(Course Director)

James Welch, CCE

Vice President, Systems Engineering  
Masimo Corporation  
Irvine, CA

David Wilder, MSEE, MSM, CCE  
Director, Clinical Engineering &  
Technology  
Southcoast Hospitals Group  
New Bedford, MA

Adjunct Faculty  
Ismael Cordero, CBET

Senior Clinical Engineer,  
Healthcare Technology  
ORBIS International, New York, NY

## Date

June 24 and 25, 2010

## Location

Tampa, FL

## Registration

Cost: \$450 (ACCE Members) / \$495 (non-ACCE Member)

Attend the course and receive a 25% discount on a new ACCE Membership. You will need to complete the application form. Membership category will be based on your qualifications.

**Registration deadline:** December 31, 2009

## Disclaimer

This course is prepared and offered by individuals who are not involved in the preparation of the CCE Exam.

## Refunds

Requests for refunds must be received in writing at the ACCE Secretariat no later than December 31, 2009. Refunds are subject to a \$100 administrative fee. Refunds will not be issued after December 31, 2009 or for "no-shows."

## Questions

Alan Levenson

Email: [Secretariat@accenet.org](mailto:Secretariat@accenet.org)

Phone (Voicemail): (610) 825-6067

Arif Subhan

[Arif.Subhan.arif@masterplan-inc.com](mailto:Arif.Subhan.arif@masterplan-inc.com)

# Perspectives from ECRI Institute:

## Upcoming Keynote Presentation in Australia

I have been invited to give the opening keynote presentation for the Engineering and Physical Sciences in Medicine and Australian Biomedical Engineering College annual conference in November 2009. The conference is in Canberra and has a theme of "Back to the Future". I have been asked to present on the state of healthcare technology in 2035.

I decided have a little fun with the presentation and try to get everyone's attention with what I hope will be a creative story summarized in the abstract text below.

Let's take a tour to the year 2035 to explore our exciting new world of healthcare technology. The trip begins with an unfortunate accident suffered by Marty McFly (a.k.a Michael J. Fox) as he crash-landed his Delorean time machine onto the round-

about in the center of Coober Pedy, South Australia. Marty suffered serious injuries from an over 500 mile per hour impact caused by the blast from his transition through the "space-time" continuum. Marty's accident was immediately responded to by a mobile emergency response hospital (MERH) that began treatment on his many injuries. This presentation will follow Marty's path through the healthcare system of 2035 on his long road to recovery. Learn about the new technology used to save his life and that interestingly helped diagnose and treat an early onset condition of Parkinson's disease.

Healthcare technology has gone through a sea change from present day to the year 2035. Much of the change was precipitated by the American Recovery and Reinvestment Act of 2009 and the Edward Kennedy US Healthcare Reform Act of 2010. Despite Marty McFly's time travel 25 years into the future, the sophisticated healthcare information systems of 2035 were able to locate his health records from 2009. This information was first requested from his MERH caregivers to identify any underlying conditions that might affect his initial care.

Many healthcare workers supported Marty's care during his travel to the year 2035. This presentation will touch on the roles played by doctors, nurses, and other caregivers as he was literally pieced back together from his severe injuries. But it will focus more on new roles for the dedicated set of professionals that developed and supported the technologies used to monitor his progress throughout his care and that now hold him back together in 2009.

Over the next several week's I'll doing



Jim Keller is ECRI Institute's Vice President for Health Technology Evaluation and Safety and a past Member at Large for ACCE's Board.

some research and thinking to help fill in the blanks for my "story" to prepare for my keynote presentation. It should be a fun project to work on. I would be interested in hearing from my clinical engineering colleagues about what kind of technology innovations you think might be used to treat Mr. McFly in 2035 and what you think our profession might look like in 25 years.

Feel free to send me any suggestions by e-mail at [jkeller@ecri.org](mailto:jkeller@ecri.org). I'd be happy to consider them. Also, if you are interested in learning more about the conference in Australia, check out the link below.

[www.conlog.com.au/epsm-abec2009/index.html](http://www.conlog.com.au/epsm-abec2009/index.html)

Jim Keller

[jkeller@ecri.org](mailto:jkeller@ecri.org)

### ACCE Clinical Engineering Certification Study Guide

The American College of Clinical Engineering has prepared a Study Guide for the Clinical Engineering Certification examination offered by the Healthcare Technology Certification Commission established under the ACCE Healthcare Technology Foundation. The Study Guide is available through ACCE for \$30. To order a copy of the Guide, please make out a check payable to ACCE and send to:

Alan Levenson, ACCE Secretariat  
5200 Butler Pike  
Plymouth Meeting, PA 19462

Or e-mail [Secretariat@ACCEnet.org](mailto:Secretariat@ACCEnet.org) and include credit card information (name on card, type of card, card number, and expiration date). *The ACCE Study Guide was written by an independent group of clinical engineers not associated with the exam process*

# The View from the Penalty Box:

As I write this we are reasonably safe, in this country, because congress is in recess. But once they wander back to Washington for their hectic 3 day work weeks we can expect all sorts of distortions, lies and misdirected information to be assaulting us over the airwaves. One of the most outrageous statements was on the 'death committees' that will determine if I get treatment or not. The intent of that provision was to allow a physician to discuss and council a patient on end of life questions so that the PATIENT'S desires were accurately known. How many of us have seen all the wailing of family members as uncle or aunt so and so lies close to death demanding all the latest techniques to keep them alive only to find out that they had not talked with the patient for years and never discussed what that person wanted for their final days. We are encourage to talk with our financial planners on what we want to do with our hard earned estates, with the undertakers on what we want for a funeral but not with our doctor? This sounds crazy as talking about money at the end of life as if it is more important than comfort and peace?

In August Tom Judd and Yadin David sent our information on various "talking points" on the healthcare bill to many ACCE members. I followed suit with several emails as did others and there was a very good exchange of ideas going on. But several of our members wrote to complain that we should not be talking about the healthcare reform and that they wanted no part of the discussions and to please take them off the emails. I sincerely hope that clinical engineers are interested in healthcare and how it is applied, funded and its future, our voices are needed more than ever so please get involved. If you don't want to get involved please get out of the profession!!!!!!

Now that many of you are mad, which is my intent, take a step back and look to what can be done to promote good healthcare. We have all seen great technology that makes life better that is not being widely used and inferior technology that continues being used because no one wants to talk with the users about getting rid of the device, procedure or service. This is why we all need to be involved with new technology, upgrading older techniques, looking for better, cheaper and more comfortable methods of keeping our patients safe and productive.

We need to simplify how we handle data, have it all in the same format, if 60% or more of hospital income is paid by Medicare why is their form not required to be used by all insurance companies?

Why is it that PACS systems will not talk with each other, so data cannot move easily between providers, just think how many repeat tests could be eliminated if that happens?

Why not use the VA electronic medical record system, it works and is available?

Why do hospitals not know what their costs are for every test or procedure? They know what they get from insurance payments but not what it test or procedure actually costs. What would you be if those costs were known a lot of tests and procedures would be dropped or changed?

Why do we need a public health insurance program? The simple solution is to allow everyone to buy into anyone one of the existing insurance programs that are offered to federal employees at the same price. How many billions will that save?

As clinical engineers we have been trained to look for solutions that are

both good and affordable. We can provide a much needed input into healthcare



costs if we choose to get involved. It was in 1989 in St. Louis where Yadin and others got this organization moving with the promise that we, as a profession, could make a difference. Many of us have made a difference with our humanitarian work in poor countries, with our teaching in international settings and generally helping with the delivery of healthcare. Now we need to step up our message in the general population as people who have answers to most of the problems with healthcare that are affordable.

Please let you voices be heard in this debate as it will impact our profession and our lives for years to come.

Dave Harrington

[dave@sbtttech.com](mailto:dave@sbtttech.com)

## Journal of Clinical Engineering – Call for Papers

The Journal of Clinical Engineering, which prints the ACCE News in each issue, is interested in papers from you. If you have an urge to write, and good clinical engineering activities or thoughts to share, please consider JCE as one of your outlets. One type of article not seen in a while is the Department Overview which presents how your department is structured and how it performs its functions. Shorter "Perspective" pieces are also welcome. You can discuss manuscript ideas with fellow member William Hyman, who is one of the editors of JCE. He can be reached at [whyman@tamu.edu](mailto:whyman@tamu.edu). Completed manuscripts can be sent to William or Michael Leven-Epstein at [lecomm1@aol.com](mailto:lecomm1@aol.com).

# ACCE

AMERICAN COLLEGE OF CLINICAL ENGINEERING

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## Calendar of Events

### October 5 - 10, 2009

ACCE Advanced Clinical Engineering Workshop - India


### October 15, 2009

 IEC 80001 Application of risk management for IT networks incorporating medical devices


### November 7, 2009

CCE Exam. 28 cities in US


### November 19, 2009

 IHE Status & Update

### December 17, 2009

 Evidence-Based Maintenance

### January 21, 2010

 Benchmarking Best Practices & CE Performance Data

### March 1-4, 2010

HIMSS Conference

ACCE Meeting and Reception  
Sunday, Feb 29

 = ACCE Teleconference

