



# ACCE News

Newsletter of the American College of Clinical Engineering

July-August 2014

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2014 Office and Board Election Results—See Page 13!

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## President’s Message



Sadly, this is my final President’s message for ACCE News. I’ve enjoyed that last two years as your President, and I’m honored to have had the chance to lead such a fine organization. It’s been fun to be in this role through some very exciting times for our profession. In the almost 30 years that I’ve been working in clinical engineering, I can’t think of when we’ve had more opportunities to grow in numbers and in stature. Thank you very much to all of our members allowing me to serve.

Although I will miss being ACCE’s President, after two very busy years, it’s a good time for change in our leadership. I’d like to congratulate our new President, Paul Sherman, and the new Board on their elections. I’m looking forward to working with

Paul and the new Board in my new role on our Board as Immediate Past President.

We’ve got lots to do over the next two years under Paul’s leadership. We’re all looking forward to getting started. There is plenty of opportunity for ACCE members to contribute to our activities and initiatives. If you are not already involved please consider helping out. The Education, International, Nominations, and Membership committees, along with our various Task Forces and the Newsletter would be happy for more volunteers and support. Also, the Board of Examiners and Certification Commission for our new Clinical Engineering Certification program are routinely looking for new members and volunteers to support their activities. Please contact ACCE’s Secretariat ([secretariat@accenet.org](mailto:secretariat@accenet.org)) if you would like to volunteer or if you have questions about any of our activities and programs.

In thinking back over the last two years a few highlights come to mind. From a personal perspective, I really enjoyed meeting new members of our profession and representing our organization at National and International meetings. The definite highlight was serving as the opening keynote speaker for last year’s annual meeting for the Association of Italian Clinical Engineers. The meeting took place in Naples Italy, and I was lucky enough to bring my wife along to make the trip into a great combination work/vacation trip. The Italian clinical engineers were very hospitable, and as you might guess, fed us very well. The theme of the Italian conference was Medical Devices and Information Technology. It was very interesting to hear about how the Italian clinical engineers were dealing with pretty much the same challenges that we are dealing with in the United States.

When I took over as President of ACCE from Mario Castaneda, we had just been through an impressive rate of growth under his leadership. I was hopeful that the trend would continue. I’m pleased to report that we’ve kept pace and are now over 630 strong. Thank you very much to the strong efforts from our Membership Committee and especially to our Secretariat Suly Chi for helping to make this happen. Our new Board will be establishing membership goals over the next few years. It’s not unreasonable to start thinking about numbers as high as 1,000.

If you are familiar with colleagues working in the clinical engineering profession who are not currently members of ACCE please share information on our contributions to the profession and

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# President's Message

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encourage them to join. As a reminder, ACCE has several categories of memberships and members are not specifically required to be clinical engineers. Our membership categories include Individual, Fellow, Associate, Candidate, Emeritus, Corporate and Institutional. Our website has detailed descriptions for the qualifications required in each membership category.

Probably the most significant thing for ACCE that happened during my presidency was the transfer of the Healthcare Technology Certification Commission from the Healthcare Technology Foundation to ACCE. This transition puts ACCE in the position of truly being the steward of the clinical engineering profession. I believe that in

order to achieve the growth over the next ten years that some have predicted we need a formal standard that defines those who wear the label of clinical engineer. The Certified Clinical Engineer is just that label. ACCE will update the clinical engineering body of knowledge as the requirements of our profession evolve. Most of the changes will likely fall in the HIT arena as we continue to manage more and more medical device integration projects. We appreciate the support from the many ACCE members who provided their input into the most recent Body of Knowledge survey. This information really helps to legitimize the criteria that are required to become a CCE.

As I wrap up this final Newsletter report as your President of ACCE I'd thank my fellow Board members, our committee and task force chairs, our new Certification Commission, and our many volunteers for

your amazing support and efforts that help make ACCE the great organization it has become. I'd like put out a special thank you to our Secretariat Suly Chi for her tireless and extremely organized work over the past two years. On so many levels Suly is the engine that makes our operations work, and I could not imagine doing the job of President without her help. Thank you for all you do Suly.

Going forward, feel free to contact me at the e-mail address for ACCE's Immediate President ([pastpresident@accenet.org](mailto:pastpresident@accenet.org)) if you have ideas or feedback for ACCE's Board.

Jim Keller

[pastpresident@accenet.org](mailto:pastpresident@accenet.org)

## Welcome New Members

Let's welcome our newest members, approved by the Membership Committee and supported by the Board of Directors.

### **Candidate Members:**

*Rocco Ottolino*—Clinical Engineer, Beaumont Health System, Michigan, USA

### **Individual Members:**

*Bhaskar Iduri*—Clinical Engineer, Renovo Solutions LLC, California, USA

*Nyasha Kanengoni*—Project Manager, Eagle Scientific, Nigeria

*Pamela Shuck*—Clinical Engineer, McLauran Health Care, Michigan, USA

*Simon Leung Cheuk Yin*—Biomedical Engineer, Tsuen Wan Adventist Hospital, Hong Kong

### **Corporate Members**

*Eric Boone*—Vice President,, EXTENSION

Healthcare, Indiana, USA—Associate Member

*Robert Porterfield*—Director of Product Management, EXTENSION Healthcare, Indiana, USA—Associate Member

*Sarah Williams*—Program Manager, EXTENSION Healthcare, Indiana, USA—Associate Member

### **Institutional Members:**

*Scott Lucas*—Program Manager, ECRI Institute, Pennsylvania, USA—Individual Member

### **New Corporate and Institutional Members:**

[ABM Healthcare Support Services](#) (USA)

## ACCE News

**ACCE News** is the official newsletter of the American College of Clinical Engineering (ACCE).

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## Perspectives from ECRI Institute:

### The Passing of Joel Nobel – Clinical Engineering Icon



Joel J. Nobel, MD

I had the pleasure to work with Joel Nobel for almost 30 years. Our most recent conversation was about a month ago related to an invitation he received to be a keynote speaker at an upcoming Saudi Food and Drug Authority (SFDA) conference on the reuse of single use medical devices. Joel had politely declined the invitation and asked me to find another ECRI colleague to fill in for him. During our conversation his voice sounded weak, and I could understand how he may not have been up for a trip to Saudi Arabia. Little did I know that it would be the last time we would speak.

ECRI Institute has been receiving tributes from all over the world since we learned of Dr. Nobel's death. An e-mail from one of our SFDA colleagues I think says it best about how influential he was to so many. I quote, "this news falling like a rocket over my head!" As you can imagine, the ECRI Institute offices have been a somber place since we learned of Dr. Nobel's passing. Those of us who worked closely with him felt like we got hit by that rocket.

I've had a hard time picturing an ECRI Institute without Dr. Nobel. He was such a force of nature and had his strong hands on so much of our operations. It's sensi-

ble to ask how we can figure a way forward without him. But among Dr. Nobel's many gifts I think that the most important was how he was able to impart his knowledge and wisdom, entrepreneurial spirit, and sense of purpose to so many individuals. That definitely applies to ECRI Institute. Visitors to ECRI Institute are often amazed at how many staff have worked here for decades. We're also proud of our many colleagues who have come back to the fold after working elsewhere. We stayed or returned because we believe in the amazing mission he started nearly 50 years ago. And, although we are sad that Dr. Nobel has passed away, we are so confident in what he has taught us over the years that we feel well prepared to carry on.

As I am winding down my final days as ACCE President, I feel honored to have represented ECRI Institute and, in effect, Joel Nobel in this role. The Clinical Engineering profession owes Dr. Nobel a huge debt of gratitude. He literally got us off the ground and has been our guide for nearly 50 years through the services he ran and provided at ECRI Institute. Just like the legacy that he left with ECRI Institute, ACCE's membership is filled with those who were influenced by and learned from Joel.



Joel Nobel, MD, Mark Bruley, CCE, 2007  
Riyadh, KSA

I am also very confident that ACCE has a strong future. A big part of that comes from what many of us in ACCE were taught by Joel. It's that we should do it for the patients, do it well, and do it with honesty and integrity. If you would like to learn more about Joel Nobel and his legacy, click [here](#) for an ECRI Institute tribute. ECRI Institute will be organizing a formal memorial event in Dr. Nobel's honor sometime during the fall of 2014. I'll be sure to keep the ACCE community informed about this and any other memorial-related activities.

Thanks for all you have done Joel. And thank you for your support, mentorship, and trust. You were one of a kind and will always be Clinical Engineering's icon!

*Jim Keller*



Joel Nobel, MD, with Max Cart display at ECRI, 2008

# View from the Penalty Box

The year 2014 will go down in history as a little on the weird side. We say the Duck's win the Stanley Cup; my old team has not won the Cup in 47 years, as it sits now in Southern California. Winter sports have changed a lot. I was headed to my grandson's game tonight, but with 87 on the thermometer, driving through rain, going 25 miles to sit in an arena. Looking through the fog to see the action prompted me to open a beer and say, "maybe next game". Hockey in July is weird. I know there is an indoor ski slope in Dubai. Winter sports are meant to be played in cold weather.

Here in the Northeast, we are putting together a symposium for early November. The New England Society of Clinical Engineers started the symposiums off in 1980, with the assistance of the Medical Device Society and the Iroquois Biomedical group. A few years later the Northern New England group joined the rotation of hosting events. The only group still active is NESCE, and it offers a symposium every 3 years. As part of the education committee one of my tasks has been to find out what prospective attendees want for a program. It seems that communication is not a strong point on sharing ideas of what is needed. I always told my students that the most important class they took was English because if they could not communicate they would forever be stuck in a basement with a limited budget. But here we are some 34 years later, and communicating is still a problem for many of the technical people working in healthcare. Maybe, we in the ACCE should put more energy into programs and webinars on communication and less on software problems.

That leads to another problem. There appears to be a major disconnect between the technology that is being developed, the smartphone applications, and how they are handled in hospitals. In recent months, I have been in hospitals where there are signs up prohibiting the use of cell phones, only to note hospital staff using cell phones all over. What is the security system for handling the information transmitted by cell phones, or portable computers or tablets? To my knowledge none are in place, there

is talk but nothing is in place. The 3D printer is touted to be able to create body parts, blood vessels, bladders and bone, but who is watching the equipment and testing the output of the devices? Is it Radio Shack or the Geek Squad? It cannot be the FDA as the items take from a few hours to a few days to complete, not the few years needed for FDA approvals. Is this something that we should get involved with or should we stay in the basement doing electrical safety and writing reports on devices needing replacement for the "C suite"? What does the "C Suite" mean?

One thing that has been very difficult for us to do, as a profession, is to remove little used, obsolete or in some cases dangerous devices from the floors and clinics. This thought process was pushed years ago when many departments wanted to keep their number of devices up. A few years back, at a prominent hospital here in Boston I found devices that were obsoleted by their manufacturer in the 1970's. When I asked about why they were still in use, I got blank stares. I was finally told that Dr. X used them. The problem with that answer is that Dr. X died several years before. Get rid of your useless items, push hard to get the items with high failure rates replaced, and get ready for the future devices.

By reading newsletters targeted at medical device developers and manufacturers, I've noticed that there are a number of very good items on the way to hospitals and clinics. As Clinical Engineers we have to be ready to install, support and train users on them. Keep your reading up to date and try to get to at least one show or symposium per year. Part of the trip should be looking at the new equipment, but a bigger part needs to be listening to what our colleagues are saying and doing in their institutions. There needs to be a good network of people you can ask questions of and get answers that you can use.

Another good source of information are the Webinars run by Tech Nation, they are free and useful. Don't forget the free items from ACCE, AAMI, or ECRI. Go to the



websites often. The websites of your regional biomed group should be visited regularly.

In closing, I want to share with you some things I've heard. I'm not sure who said it, but it sure fits what we are going through in Washington. Simply put, "If you want a high paying job with great benefits for very little work get elected to congress". Another one was "Elected officials should be required to wear uniforms like NASCAR drivers, and then we can see what companies are "supporting them". One more point, why are so many US companies buying companies based outside of the US? Much lower taxes are the answer, but those companies are right at the front of the line when it comes to government contracts or grants or special rules.

Please get involved and maybe we can have affordable healthcare for everyone.

Have a great summer.

*Dave Harrington*  
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## **ACCE Job Website Job Postings**

For posting job opportunities, please contact Dave Smith at [advertising@accenet.org](mailto:advertising@accenet.org)

# AAMI Update

## AAMI Urges Federal Recognition of Healthcare Technology Management

AAMI has asked the U.S. government to recognize healthcare technology management as a professional field in its official occupational classifications, as well as add “clinical engineer” and “clinical systems engineer” to its roster of job titles.

In comments submitted to the U.S. Office of Management & Budget (OMB) for its standard occupational classification (SOC), AAMI said that the names and titles have changed amid “explosive growth of technology used in healthcare.” Federal recognition of the terms, AAMI said, would help to clarify roles and responsibilities.

“There has been confusion and misunderstanding about the current classification for the field of healthcare technology management,” AAMI said in its comments, adding that the field includes a range of professionals, including clinical engineers, biomedical equipment technicians, radiology equipment specialists, and others. The OMB should revise the SOC system to reflect this growth, AAMI urged.

The SOC system is used by federal statistical agencies to classify workers into occupational categories. All private, public, and military occupations are classified under the system, which provides information on employment levels, trends, pay and benefits, demographic characteristics, required skills, and other information, according to an OMB notice in the May 22 *Federal Register*. Individuals, businesses, researchers, educators, and policymakers may use the data to conduct analyses. The 2010 SOC revision is in effect, and the OMB has said it is considering a revision for 2018.

In its comments, AAMI proposed that “Healthcare Technology Management—Engineers” be listed under the category “17—Architecture and Engineering Occupations.” The comments include a description of the nature of work performed by these professionals, including the coordination and acquisition of new healthcare technology, development of preventive maintenance schedules and guidelines, and review of safety alerts and recall notices.

The job titles of clinical engineer and clinical systems engineer do not appear in the current SOC, but AAMI suggested including the titles under the HTM—Engineers occupation. AAMI described the primary employers of these professionals, including healthcare delivery organizations and medical device companies, as well as the rigorous education required to obtain these positions.

In addition, AAMI called on the OMB to change the name of the occupation “Medical Equipment Repairers” to “Healthcare Technology Management—Technicians.” This occupation would be reclassified under “17—Architecture and Engineering Occupations,” moving it from “49—Installation, Maintenance, and Repair Occupations.”

AAMI’s full comments are available at [www.aami.org/news/2014/072114\\_SOC.pdf](http://www.aami.org/news/2014/072114_SOC.pdf).

### A Call for Clarity

A proposed federal framework for regulating health information technology (IT) has elicited one common theme from a variety of stakeholders: We need more clarity.

The draft report, titled *FDA Safety Innovation Act Health IT Report: Proposed Strategy and Recommendations for a Risk-Based Framework*, was released in April by the U.S. Food and Drug Administration, Office of the Coordinator for Health Information Technology (ONC), and the Federal Communications Commission (FCC). The three agencies then spent several months collecting feedback.

“Although AAMI doesn’t typically submit comments to regulatory agencies, health IT represents a significant patient safety issue that needs to be addressed from a multidisciplinary, non-advocacy lens,” said AAMI President Mary Logan.

AAMI heralded the report as a “reasonable first step” toward providing regulatory clarity for health IT, but added that more action is required. “Clarity in this area is urgently needed—the difficulty in knowing what health IT products are subject to which regulation creates chaos for health IT

developers and producers, inhibits investment in the field, and hinders the advancement of technology,” AAMI said.

In its comments, AAMI also stressed the value of bringing systems engineering principles into healthcare. These principles have been used successfully in a variety of high-reliability industries. “AAMI recognizes that regulation of health IT is the focus of the FDASIA report, but was surprised that the implementation of systems engineering principles is not afforded more attention.” It is critical that the healthcare industry embraces systems engineering, AAMI noted, pointing to a recent report from the President’s Council of Advisors on Science and Technology that echoed this call.

In their framework, the agencies recommend the creation of a Health IT Safety Center, a public-private entity that designed to promote health IT as a key component to ensuring patient safety. ONC would create the center and would work with the FDA, FCC, Agency for Healthcare Research and Quality, and other health IT stakeholders to promote “a sustainable, integrated health IT learning system.”

AAMI praised the effort, but noted that as the report is currently worded, governmental actors would play a bigger role than the private players. The comments highlighted the AAMI Foundation’s Healthcare Technology Safety Institute (HTSI) as a model that the center could emulate. Many of the issues HTSI works on—including the prioritization of physiological alarms and improving the monitoring of patients on opioids—intersect with health IT. AAMI suggested the foundation and HTSI serve as founding partners of the center and participate in its governance structure.

To read AAMI’s comments, visit [www.aami.org/news/2014/070914\\_AAMI\\_Response\\_FDASIA\\_Report.pdf](http://www.aami.org/news/2014/070914_AAMI_Response_FDASIA_Report.pdf).

### Report Seeks to Guide Executives on Meeting Top Safety Challenges

Busy healthcare delivery and medical device executives have a lot on their plates. A report from AAMI and ECRI Institute is in-

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# International Committee: Tec Monterrey—Salud 360 Report

I was invited to give a talk on clinical engineering (CE) to Biomedical Engineering (BME) students of Instituto Tecnológico y de Estudios Superiores de Monterrey – ITESM (aka TEC de Monterrey) on April 25, 2014. The title of my talk was “Clinical Engineers’ role in Global Health.”

My presentation was part of a 3-day program organized by the Student Society of Biomedical Engineering, together with similar societies of other health sciences (medicine, nutrition, health administration, dentistry, and psychology). This was the 10th year of such events, thus called the **X International Symposium of Biomedical Engineering**. The main theme of the symposium is “**Health without borders**” and several speakers from foreign countries were invited, such as:

- Dr. Paolo Macchiarini - Professor of Regenerative Medicine at Karolinska Institute in Stockholm
- Justin Cooper, M.S.E. – Engineering World Health BMET Coordinator for Honduras
- Ing. Adriana Velasquez – WHO
- Dr. Herbert Voigt - President, IUPESM and Professor, Biomedical Engineering, Boston University
- Dr. Winfried Mayr – Medical University

of Vienna

The event had about 100 BME students registered from all parts of Mexico, most of them from the various campuses of Tec Monterrey.

One amazing detail about this symposium is the fact that it is totally organized and managed by the students, with very little, if any, help from the Institute or faculty. They raise the funds from companies, invite the guests, assign guides to each international speaker, collect registration fees, and raise funds for international organizations (e.g., for Doctors without Borders). It is truly a remarkable, talented, and dedicated group of students who undoubtedly have great professional future.

In addition to meeting with the students and leaders of the BME Student Society, I had the privilege of meeting the BME program director, Ing. Agustin Emmanuel Carvajal, who has earned a MEng from ITESM. Mr. Carvajal was kind enough to give Professor Voigt and me a tour of the laboratories of the BME program. We were well impressed by the instrumentation they have, including a well equipped gait study lab with high quality video equipment. On the other hand, they did not have much medical equipment or CE test and measure-

ment equipment. Apparently, the only opportunity the students have in getting their “hands wet” is when they take internship at hospitals. The CE course is taught by Anabel Saldierna, who is the CE Director of a nearby hospital and also adjunct faculty of ITESM.

According to Mr. Carvajal and the students, at least 50% of the graduates seek employment in CE because there is little demand for research and development talent in Mexico (due to the very small amount of manufacturers there). So most of the BME graduates eventually get jobs in hospitals managing medical equipment or in government agencies. Since only a small fraction of Mexican hospitals have CE departments, the need is very real and the demand growing with economic improvement. Therefore, it seems that there is an urgent need to strengthen significantly CE education and training in Mexico in order to meet the demand. Although prior ACEWs have helped to raise awareness and local capacity, additional investment is still sorely needed.

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## AAMI Update

(Continued from page 5)

tended to help them stay ahead of technology-related issues and prevent a patient crisis before it happens.

In the report, titled *Executive Insights on Healthcare Technology Safety*, AAMI and ECRI Institute identify and address five major safety-related issues: alarm systems, Luer connectors, cybersecurity, batteries, and recalls. These issues were chosen after an evaluation of recalls, safety notices, complaints, adverse incident reports, U.S. Food and Drug Administration priorities, and analyses of recurring problems identified by technology experts.

“As top executives at our respective organizations, we know just how difficult it is in a fast-paced environment to monitor and act on trends,” AAMI President Mary Logan said. “Patient safety should be a top priority, and this report educates leaders about the types of questions they should ask to stay in front of any potential technology challenge.”

In the report’s introduction, Logan and Anthony J. Montagnolo, ECRI’s executive vice president and chief operating officer, listed these primary goals:

- Synthesize key insights on safety issues that tell an important story
- Share wisdom on key technology-related issues that merit executives’ attention
- Move executives to the front end of issues

The report, a succinct and clear eight pages, summarizes each of the major safety issues, listing questions healthcare delivery and medical device executives should ask themselves. For example, on the topic of alarm systems, AAMI and ECRI advise healthcare delivery executives to consider deploying a multidisciplinary team to meet The Joint Commission’s National Patient Safety Goal on alarm safety, while medical device executives are advised to determine how their technology is affecting overall alarm management issues in healthcare delivery.

To read the report, visit [www.aami.org/aami-ecri/Tech%20Trends%202014.pdf](http://www.aami.org/aami-ecri/Tech%20Trends%202014.pdf).

AAMI Staff

# Healthcare Technology Foundation News



## Alarms Update

Izabella Gieras is leading the charge for the alarm workgroup within HTF. Other members include Tobey Clark, Jennifer Ott, Nancy Pressly, Marcia Wylie, Tony Easty, Tom Bauld, Jim Keller, Marge Funk, Paul Coss, and Yadin David. Following the successful Alarms Roundtable at AAMI 2014 the group has been working on fostering continued partnership opportunities with AAMI on this important topic. An article summarizing the roundtable will be in AAMI News. HTF will be a co-convenor of the National Coalition Alarms Initiative. Thoughts on AAMI 2015 are already under development. Current research on education modules involving alarms is underway. The goal would be to have materials available for patient and family education. We are also working on a collaboration opportunity with the California Hospital Patient Safety Organization.

## HTF Expert Panels

HTF is exploring the opportunity to offer the services of available HTF board members on expert panels. This is a fast, affordable resource for gaining valuable insight from a number of healthcare technology thought leaders at one time. Expert panels are qualitative in nature, and differ from focus groups in that they are not blind research studies with groups of potential customers. As a faster and less expensive alternative to focus groups, HTF Expert Panels deliver insight to guide:

- Product development and new product market potential
- Market expansion
- Brand benchmarking and assessment
- Competitive positioning for healthcare products and services
- Healthcare industry trends
- Product and solution benchmarking
- Clinical research, and more

HTF Executive and Advisory Board members are thought-leaders representing a broad spectrum of healthcare technology fields, and possess a deep understanding of topics such as:

- Clinical decision support
- Alarm management
- Wireless infrastructure and standards
- Home healthcare
- Standards requirements
- Clinical and biomedical engineering, and more

HTF looks forward to cultivating this concept.

## ACCE Partnership

One aspect we certainly want to grow is to continue our partnership with ACCE and its members. We need to work in collaboration on projects and funding. If any ACCE member is interested in joining HTF please contact Tobey or Jennifer. We are looking for some fresh perspectives as we continue the journey.

## HTF in the News: HTF Board Member Yadin David Participates in Medical Design Excellence Awards

The YouTube video with interviews with Yadin David and other jurors of the Medical Device Design Excellence Awards is now available from Medical Device and Diagnostics Industry website. You will find this discussion of new products and industry trends fascinating!

<https://www.youtube.com/watch?v=635CFnfj0M0>

Be sure to visit the HTF website, [www.thehtf.org](http://www.thehtf.org) to see our programs and resources. While you are there, feel free to hit the DONATE NOW button. We will accept them anytime and they are always tax deductible!

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## Advocacy Committee Update

Steve Grimes is no stranger to the ACCE community and a strong advocate for clinical engineering. This former ACCE President is now Chief Technology Officer, ABM Healthcare Support Services, in Boston; ABM being a major sponsor of several ongoing ACCE activities. Steve has co-lead the CE-IT Steering Committee for HIMSS since its inception in 2008; this group facilitated the development of the CE-IT Community that year with ACCE and AAMI, see <http://www.ceitcollaboration.org/>.

Steve did an excellent presentation at the July 7 CE-IT Community Town Hall, titled *Where have we been? & Where are we heading?* The description of the webinar was as follows:

“Rewind 5 years back to the HIMSS09 Clinical Engineering & IT Symposium in Chicago, IL. During that symposium, international industry experts discussed that the broad adoption of interoperable electronic health records demands complex convergence of medical devices and healthcare application systems. During this session we will explore the same question: CE-IT Convergence is it a perfect storm for disaster...or an opportunity for optimal interoperability?”

Check out Steve’s recap of these past five years for CE-IT convergence; some conclusions are noted below. See the rest with slides and recording available at <http://www.ceitcollaboration.org/resources.asp>.

Among other conclusions, Steve stated that technology will continue to evolve in ways that blur lines between our old ideas, for example, when is a computer (or software) a medical device? Moving forward, medical equipment manufacturers will primarily focus on software that will be hardware platform agnostic. Along these lines, the future of clinical data analysis and storage is in the cloud.

*Tom Judd  
[judd.tom@gmail.com](mailto:judd.tom@gmail.com)  
Advocacy Committee Chair*

# When (If Ever) Can You Say “No, I’m Too Busy”

By William Hyman

Constrained resources are certainly nothing new, whether these are staffing levels, spendable dollars, or hours in the day. Increasingly these constrained resources come with expanding workloads. The now classic example is the addition of interoperability and networking issues to the more traditional duties of clinical engineering, to which has recently been added preventive maintenance and its management becoming even more time consuming as strictly following manufacturers recommendation for more devices becomes officially required. And these are just some specific aspects of the desire to be a broader contributor to hospital functionality.

More work with the same or fewer resources requires an assessment of how this actually gets done. One possibility is the unlikely scenario that there has been idle time such that the increased work just fills out the days. A second possibility is increasing the numbers of hours worked. If this is paid overtime then the need for hours is also a need for the corresponding money resource. Similarly, contracting out the better defined work is also a money problem, and one that can be more expensive than hiring more people, while also recognizing that this also involves the accounting magic of which-pot-does-the-money-come-from. At the management level more work might mean longer days and weeks, and the associated stress. However even for the willing there is a limit to how much quality time one can put in. In this regard, I recently heard it suggested that the manager life style is seen by those who might move into managerial positions as a reason not to pursue management rather than it being inspiring. This has implications for succession planning.

In combination with more hours, there can be a reallocation of time which basically means that some other projects get squeezed (i.e. delayed, done less well) in order to devote more time to the new activity. Squeezing might be done across the board or as a result of a dynamic reprioritization. However, this too has inherent limits. Doing more things at a lower level cannot be a long term or a satisfactory

William Hyman is Professor Emeritus of Biomedical Engineering at Texas A&M University, Adjunct Professor of Biomedical Engineering at The Cooper Union, and an Emeritus Member of ACCE. He now lives in New York City. E-mail: [w-hyman@tamu.edu](mailto:w-hyman@tamu.edu)

solution. Also to be avoided is the notion that anything new is inherently more important than all of the other things we were already doing.

In this environment the question then arises as to when, if ever, you are allowed to say “sorry, I don’t have time to do that.” In this regard it is interesting that in the short term we do understand time limitations. I can only go to one meeting at 10:00 AM on Thursday. If asked to another meeting you either have to say “no, I can’t because...”, or cancel the first to go to the second. When it comes to longer term activities we often lose the ability to say no, at least in the context of our primary employer. Service to professional organizations such as ACCE is often a secondary impact as the work related squeeze may cause us to cut back on our more voluntary contributions.

Perhaps a passive-aggressive approach would be to actually ask “what should I stop doing so that I can do what you are now asking me to do?” Of course for managers, the implied and perhaps even express answer is “do this also”, and then we are back to the squeeze. We also recognize however that the willingness and ability to take on more and more activities is what brings positive recognition and professional development, and the people who get asked to do more are those who have previously demonstrated that they can and will do more, and do it well. This past behavior reaffirms that asking such people to take on new tasks will have a good outcome, and when they do produce good outcomes, there is further reinforcement of this expectation.

So are the successful doomed to doing ever more work, or is there a limit that needs to be recognized by both the doer and the asker? Given that there must be some limit, how is that limit identified and communicated without seeming negative and uncooperative?

One approach is to fairly identify and communicate how much work a task involves, and how that work will be accomplished over what period of time. In turn the people resources required should be identifiable, along with any other expendables. This then needs to be discussed with the person asking, or with others who are controlling expectations and resources. This will demonstrate earnest attention to the task, and perhaps more importantly align expectations with accomplishment and maybe even allow for greater resources. This is far more rational than simply agreeing to take it on and risking disappointment (or exhaustion), either on this task or on some other task(s) that don’t get done because you were working on this one. Understanding where you are and planning for the future is of course the essence of project management. However, here the project is all that you do, as opposed to managing each of the things that you do.

## Journal of Clinical Engineering Call for Papers

The Journal of Clinical Engineering prints selections of the ACCE News in each issue and is interested in papers from you. If you have an urge to write, and good clinical engineering activities or ideas 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. Contact: [w-hyman@tamu.edu](mailto:w-hyman@tamu.edu).

Send manuscripts to William or Michael Levenepstein at: [michael.levenepstein@gmail.com](mailto:michael.levenepstein@gmail.com)



# Managing Batteries through CEMS

By Jim Smith

A recent *BI&T* article “All Charged Up – The Many Challenges of Battery Maintenance” (March/April 2014) by Martha Vockley highlight many troublesome and challenging battery management issues. The article hinted at several questions and required elements needed to solve these issues. These include:

1. Where is HTM going? Trying to identify/solve a myriad of known and quantified battery issues.
2. How will HTM get there? Apply technical skill/applications, training, and identifying unneeded technology before it enters the hospital.
3. How will HTM know it has resolution? Measure significantly less battery issues based on application of process(es), training, or system(s).

One limitation of Vockley’s article is the small available sample size. The article is based on a “small-sample qualitative survey of nine respondents from nine hospitals in a network of 250 healthcare facilities that participate in the U.S. Food and Drug Administration (FDA) Medical Device Surveillance Network, known as MedSun/MAUDE”.

There are more than 5,000 hospitals in the United States. It is time to centralize all of this HTM device experience into one, non-profit, storage system of medical device experience. As the article points out, the nine reporting hospitals had a combined ability to identify, join and report on their outcomes. Shouldn’t all HTM departments report failures to MAUDE through a standardized failure code system, such as the FDA’s Device Problem Codes (DPC)?

What’s the solution? All Clinical Equipment Management Systems (CEMS), more generally known by the dated term CMMS, and manufacturers’ diagnostic, error, and failure codes should adopt or provide translation tables to these codes. The HIMSS/AAMI/ACCE backed IHE PCD Medical Equipment Management (MEM) standards-based framework could then expand to incorpo-

rate these standards-based device failure messages.

Jim Smith is President of EQ2, a provider of clinical equipment management systems (CEMS) for hospital and other healthcare organization. Jim is an active member of the Integrating the Healthcare Enterprise and has led EQ2 to provide direct HTM interoperability and systems thinking to medical devices and systems management.  
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This solution would make large statistical samples of medical device experience available to everyone. This data is to be initially composed of US hospitals. Soon, if IHE PCD and DPCs are accepted, it would include the World’s hospitals.

To facilitate achieving this solution, the FDA and IHE PCD would need to provide periodic and easily accessed training and certification processes for end-users, manufacturers and system providers in correctly coding outcomes. This is where collection of automated battery status data would be utilized. Once a defined failure occurred, the status of the device at the point of failure, along with its operational status (e.g., the battery failed after being powered for 1.5 hours), would be available and correlated to the failure event.

This information would then be transmitted back to MAUDE or similar such data library of shared user experience. I’m not sure that a CEMS could, or even should, take on the responsibility of deciding whether a battery event is good or bad, but certainly the tracking, notifying and collating of possible pending issues for HTM review, both local and national, is appropriate.

In her article, Vockley also references comments from Chris Lavanchy, engineering directory at ECRI. Lavanchy classified battery usage in different devices based on their need in the design as opposed to a convenience. He stated, “For some applications, such as defibrillators, transport ventilators, heartlung machines, ventricular assist devices, and intra-aortic balloon pumps, batteries are vital”. In some equipment, “such as patient lifts, infusion pumps, surgical saws, suction pumps, and mobile X-rays”, batteries provide a benefit or con-

venience, but are not completely necessary. In other devices, “such as patient scales, sequential compression devices, stationary infant incubators, and operating room tables”, the need for batteries is questionable. Lavanchy implied that there may be a “luxury factor” of having all of these devices with batteries, while it’s not critical to their function. Are the batteries really necessary considering the challenge of managing them?

To tackle this issue, HTM departments nationwide and even worldwide could create a standard identification process for rating battery powered devices on a scale (e.g., 1 through 5) for use in the following areas:

- a) Critical care
- b) Transportation
- c) General patient care
- d) Non-patient care

This standard could then be supported within the HTM’s CEMS. Each of these areas would have properties for OEM versus non-OEM battery usage. For example, in critical care and transportation, the need for OEM batteries would be rated higher (e.g., 5 on a 1 to 5 scale) and highly suggested. This would be an excellent choice because it avoids complications when being sued and/or voiding manufacturer’s warranty or service contract.

Other properties would indicate the need to carry a charged spare or secondary device depending on the environment of care being serviced. Use in an ambulance or with patient transfer is a great example.

All ratings would then be linked to the RTLS system through the CEMS, and boundaries could be established for device usage. These OEM and location boundaries could be crossed, but the CEMS and RTLS would document and then provide

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# Managing Batteries through CEMS

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increased notification, process control, or support the need for any training.

In Vockley's article, Lavanchy went further by stating that batteries can be a "blessing" or a "burden". According to Lavanchy, "there is a tradeoff between the convenience of battery power and the burden to maintain them". "Maybe it is a bit of a luxury factor in having all these devices with batteries. Maybe we're putting batteries in devices just because we can."

This is an interesting statement. Do hospitals need the batteries on many of the devices they use? Are manufacturers including battery technology because uninformed requesters ask for battery features by habit? This is why adoption of IHE PCD battery status metrics are so important for HTM departments worldwide. Having smart, connected, national and worldwide CEMS would enable the HTM's role in equipment replacement to expand based on the HTM department's ownership of accurate information.

Another issue with battery management is providing, managing and documenting (reporting on, comparing, etc.) HTM technician and floor staff training. This could also include home health user training. Vockley stated, "The sheer number and variety of battery-powered medical devices compound the challenges in both clinical and nonclinical settings".

In her article, Vockley also quoted Dominick Frustaci, vice president of R&D and product development engineering at Greatbatch Medical, stating, "The persistent demand to reduce battery size, increase longevity, and add device features continues to drive batteries with more power and energy in a smaller package, which inherently adds risk".

Notice that Mr. Frustaci didn't mention battery status notification or safety. This is probably because purchasers assume safety or have no information about the many, interrelated and complex problems that are associated with battery use. In addition, training and maintenance are probably not the main concern of the purchasers because that is someone else's concern. This is another opportunity for HTM experts that do have this experience to be represented during the purchasing process.

In the article, David Bradley, director of biomedical engineering at Nationwide Children's pediatric hospital, discussed the difficulties in managing battery failures in home health equipment. One such difficulty in servicing is due to "low compliance in getting equipment returned". Alan Lipshultz, president of Healthcare Technology Consulting, stated, "The ARAMARK conclusion is that the primary cause of premature battery failure seems to be a mismatch between OEM expectations and clinical users' understanding the ability to care for the batteries".

Probably all CEMS need to provide optional mechanisms for distributing, managing and documenting (reporting on, comparing, etc.) HTM technician, floor staff and home health user trainings including battery processes at the model level. Training, even on a bad system, provides the user the opportunity to still succeed at the task at hand. In addition, by using a CEMS system that keeps track of the training outcomes per user and then tracks these users to see if use errors continue, HTM becomes the cornerstone of the hospitals clinical equipment/system training commitment.

As with all change, there will be issues and nothing, at first, will be perfect. For HTM to survive as an integral part of healthcare, HTM must stand on the right side of the change that is sweeping through healthcare – lower overall cost (about 30% less), increasing patient safety, better healthcare

outcomes with lower risk, and the list of required elements of change continues to grow for HTM.

Meaningful Use and the Affordable Care Act (ACA) have now turned healthcare's attention away from the primary patient-clinician interface (e.g., the doctor's notes) towards medical devices and system interfaces, interactions and standardizations. This is an area where HTM will shine if HTM backs and works with the associations (AAMI, ACCE, and HIMSS) standards groups (IHE PCD) and manufacturers – Hospira, B Braun, Smiths Medical, Philips, Cerner, Guard RFID, AwarePoint and EQ2 who are spending time and research investment dollars to bring this live, real time, standardized information to HTM.

HTM has a tremendous opportunity to be a key player in the interoperability and standardization focus of Meaningful Use. HTM works with and understands these interrelationships since it is one of the key values and knowledge bases of the HTM community. This value will only be appreciated if it can be standardized and accessed to assist in the goals of Meaningful Use – lowering costs and increasing the quality and safety of healthcare.

HTM departments have the information and knowledge to assist in solving many of the problems listed in this article. Just stop and ask a biomed out on the floors and the knowledge database they have in their heads is staggering. I ask for your assistance in standardizing and enabling the collection and transmission of this information to greatly aide in both the lowering of costs and increasing the quality and efficiency of healthcare, while raising the profile of HTM within healthcare. Look to the efforts of IHE, the FDA and others. Evaluate their messages and process and then join in. There is great information and process information in HTM. Let's work together to make it accessible and valued.

## Journal of Clinical Engineering Subscriptions for ACCE Members

ACCE members receive a discounted subscription to the [Journal of Clinical Engineering](#) for only \$99! (Originally \$222). You must [login](#) to the ACCE website to view the code. Then visit [LWW.com](#) to enter code.

# Congratulations to the UConn Clinical Engineering Graduates of 2014!

The University of Connecticut (college basketball champions of the world), School of Engineering and Computer Science, Department of Biomedical Engineering graduated another well qualified crop of clinical engineers this year. During their two year program each of these students took seven clinical engineering courses from Frank Painter and one BME course from other faculty. They also spent two years completing an internship at one of the fourteen cooperating teaching hospitals in Southern New England. This year the program is celebrating its 40<sup>th</sup> graduating class of clinical engineers. The first 25 years were under the direction of Dr. Joseph Bronzino, the last fifteen under Painter. Almost all of this year's graduates received multiple job offers, and everyone is now employed in some aspect of clinical engineering. Three are at Partners Healthcare in Boston, two with the New England VA Healthcare System, one at Middlesex Hospital in Connecticut, one at Kaiser Permanente in California, and three at Philips Healthcare.

The first year class, which still has one year to go, are all working full time as clinical engineers during the summer between their first and second year. Students in the program receive a tuition waiver from UCONN and a graduate student stipend. These stipends are paid through a contract arrangement with the 14 internship hospitals.

Applications for the program are received from interested candidates in January, and interviews are then conducted in March. Students for the following fall are selected in April each year. Employers interested in hiring the graduating students usually start the process in January.

If you are interested in hiring a student, teaching a class or recommending a student for the UCONN program, contact Frank Painter at [frpainter@enr.uconn.edu](mailto:frpainter@enr.uconn.edu).



UConn Clinical Engineering Graduates, Class of 2014.



Current class, graduating in May 2015, pictured with Frank Painter.

## ACCE Congratulates the 2014 Class of Certified Clinical Engineers

*Photios Dalamagas*—Soma Technology, Bloomfield, CT, USA

*Caitlin Fairney*—Massachusetts General Hospital, Boston, MA, USA

*Stephanie Liddle*—Massachusetts General Hospital, Boston, MA, USA

*Kimberley John Greenwood*—Children's Hospital of Eastern Ontario, Ottawa, Canada

# Thank You from the Education Committee!

The Education Committee would like to take some time to thank our speakers from the 2013-2014 Webinar series. They made it possible to have a very successful Webinar Series. We had a lot of distinguished speakers from all over the country, representing manufacturers and hospital staff. We had doctors, clinical engineers, IT representatives, managers, directors, administrators, etc.

We would like to thank all of them for taking time out of their busy schedule to share with us their knowledge and help us advance the Clinical Engineering profession. These speakers not only took time out of their busy schedule to support ACCE through the Webinar Series, but they did this for free in order to help ACCE save money and use it to support other ACCE activities.

**Jim Keller, MSBE & Izabella Gieras, MBA, CCE & Tom Bauld, PhD, CCE, FAIMBE**

"Alarm Management Best Practices"  
September 12, 2013



**Paul Frisch, PhD**

"RTLS 2.0"  
January 9, 2014



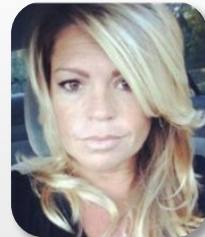
**Dan C. Pettus**

"IHE/PCD: Advancing Products and Integrated Workflows"  
February 13, 2014



**Syed Samiullah, MS & Chris Gutmann, MS & Jennifer Cavin**

"Career Development and Succession Planning"  
October 10, 2013



**Steve Grimes, FACCE, FHIMSS, FAIMBE & Erin Sparnon, MEng**

"CE/IT: Wireless Security"  
March 13, 2014



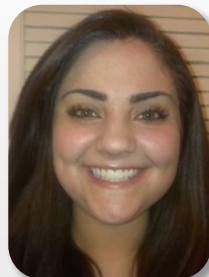
**Binseng Wang, ScD, CCE, FAIMBE, FACCE**

"Clinical Engineering Productivity Benchmarking"  
November 14, 2013



**Jennifer DeFrancesco, MS**

"Clinical Engineering Department Management"  
December 12, 2013



**Jacob Johnson, MS CCE**

"CE/IT: Change Management Best Practices"  
April 10, 2014



**Kevin Phillips**

"Continuous Care Model"  
May 8, 2014



(Continued on page 13)

# 2014 ACCE Officer and Board Election

Thank you for participating in the 2014 ACCE Officer and Board Election and casting your important vote. The election for ACCE's new Board for the year 2014 has been finalized and the results have been approved by the Board.

The election ballot was emailed to 276 eligible members, who include Individual, Fellow and Emeritus members in good standing. Institutional/Corporate Fellow and Individual members also participate in elections. Of the 276 members, 111 votes were cast between July 14 and July 29, 2014.

The new Board of Directors will take office as the governance body for ACCE on August 22, 2014. We are pleased to announce our wonderful team and as always, we look forward to serving you and your needs.

Title	Name
President	Paul Sherman, CCE
President Elect	Iilir Kullolli, MS
Immediate Past President	Jim Keller, Jr. BS MSBE
Vice President	Arif Subhan, CCE
Secretary	James Panella
Member at Large	Shelly Crisler, CCE
Member at Large	Joan Brown, CCE, MBA
Member at Large	Alan Lipschultz, CCE, PE, CSP
Member at Large	Ismael Cordero

The following Board member will be continuing the second year of his term for this year:

Title	Name
Treasurer	Don Morge

*On a personal note, I have thoroughly enjoyed working as the Secretary of ACCE for the past two years (2012-14), and I sincerely thank the membership and the Board for giving me the opportunity to serve you. My best wishes and good luck to the new Board!*

Sincerely,  
Pratyusha Mattegunta  
Secretary

## Thank You from the Education Committee!

(Continued from Page [12](#))

## From all of us - THANK YOU!

Jacob Johnson  
Education Committee Chair

For information on the future 2014-15 Educational Webinar Series, please visit the [ACCE website](#).

### Asadullah Khan, MS & Ramakrishna Parchuri, MS & Karen Kan, MS & Brian McLaughlin, MS, CCE

"Hybrid OR: Emerging Technologies in the Perioperative Environment"  
July 10, 2014





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# ACCE Calendar

## September 11, 2014

Educational Webinar: Interoperable Medical Device Interface Safety

Speaker: John Hatcliff, KSU

## September 15-19, 2014

2014 National Health Week ([NHIT Week](#))

## September 16-17, 2014

[AAMI/FDA Summit on Ventilator Technology](#), Herndon, VA

## October 1-3, 2014

[MD Expo Fall 2014](#), Orlando, FL

## October 9, 2014

Educational Webinar: IHE PCD MEM—Integrating Device Data to CMMS

## November 20-21, 2014

[The Clinical Alarm Safety Symposium](#), Herndon, VA

## April 12-16, 2015

[HIMSS 2015 Annual Conference & Exhibition](#), McCormick Place, Chicago, IL

## June 5-8, 2015

[AAMI 2015 Conference & Exhibition](#), Denver, CO

## June 19, 2015: ACCE's 25th Anniversary

# ACCE

AMERICAN COLLEGE OF CLINICAL ENGINEERING

## The ACCE Board and Committee Chairs

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