



# ACCE News

Newsletter of the American College of Clinical Engineering

November — December 2019

Volume 29 Issue 6

**NEW!**  
**CCE Prep Column**  
page 6



## President's Message



Last month I had a unique opportunity to visit our Clinical Engineering colleagues in Nanjing, China to mark the start of celebrations for the Global Clinical Engineering Day. I always enjoy traveling, but China has recently claimed a special place in my heart. The culture, food, and the welcoming people are probably a big reason for that. However the biggest reason is the Clinical Engineering community. They are hungry to learn, happy to share their experiences, and they always have very thought provoking questions – which I must admit, sometimes have caught me by surprise. They are also a very engaged community – which was very evident based on the on-site presence (over 1,000 people) and online presence (over 300,000 people joined the conference sessions online live video feed!). I joined Yadin David (first ACCE President and board member and past Chairman of IFMBE/Clinical Engineering Division) and Tobey Clark during this visit and had a great opportunity to learn from them and discuss our shared vision of Clinical Engineering profession in US and the World.

One of the goals we have set for ACCE this year is to have each one of us more engaged with the profession and ACCE. This engagement and dedication towards the profession is what sets us apart, as a professional organizations, from many other trade organizations, and it is the life and blood of Clinical Engineering. As such, I would like to challenge each one of us to do one thing each month that shows or promotes engagement in the field, and to share this with us via email or social media. An engagement activity can be as easy as sharing a Clinical Engineering best practice with our members or social media, it can be participating in an ACCE Committee, or it can be sharing the CE profession with others (school, conferences, etc.). Whatever it is that you do to be engaged in Clinical Engineering, please share it with us and we will share it with the broader community!

Staying on the topic of engagement, I would like to thank our Education Committee for holding a very successful webinar this month on the Urgent II Vulnerabilities, which were announced recently. Recognizing a problem in the field and understanding the risk posed to healthcare devices and systems, and ultimately patients, they were able to put together a great webinar with leaders in the field that had one of the highest webinar attendance we have seen. Thank you Education Committee and presenters for a great job addressing current issues!

The Education committee has a great lineup of additional webinars set up each month. It is a great way to keep up with what's happening in the Clinical Engineering field, and to learn from great leaders.

The International Committee, led by Binseng Wang, has been working hard at collaborating with many international Clinical Engineering organizations. Some of them attended the International Clinical Engineering Day celebrations in Rome, Italy and many of them had a chance to meet there. Binseng led the signing of multiple collaboration agreements with different CE Organizations. I want to take this opportunity to thank him for his involvement and for pushing the profession and collaboration forward!

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# President's Message– Continued

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Conference faculty including ACCE's Tobey Clark, Ilir Kullolli, and Yadin David



Ilir Kullolli speaking during Global Clinical Engineering Day

Lastly, I want to welcome our two recent Committee Chairs – Jim Keller, who will be leading the CE-HOF Nominating Committee and Kevin Kreitzman, who will be leading the Advocacy Committee. With their leadership and experience we know these committees are in great hands!

I want to wish you all great holiday season with your families, friends, and colleagues. Thank you for being members of ACCE and for your continued support of the profession!

Ilir Kullolli  
ACCE President  
[president@accenet.org](mailto:president@accenet.org)

## ACCE News

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

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ACCE News is a benefit of ACCE membership; nonmembers may subscribe for \$75 per year.

# Volunteers wanted!

If you would you like to volunteer for ACCE, please complete this volunteer [survey](#).

Volunteers are needed to write ACCE News articles, participate on a variety of important committees and assist in various other roles.

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# Member Career Transitions

Welcome to our ACCE News feature celebrating job-related transitions for ACCE members. Please contact Suly Chi, ACCE Secretariat ([secretariat@accenet.org](mailto:secretariat@accenet.org)) if you would like to be included in an upcoming issue or if you have a suggestion for another member who should be included. Congratulations to Binseng, Sarah, and Samantha on their exciting new roles.



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

Binseng joined Sodexo Clinical Technology Management (CTM) in Brentwood, TN, as its Vice President for Program Management. He is responsible for the strategic alignment of medical equipment management and maintenance services provided by Sodexo CTM to numerous healthcare delivery organizations with the quality and regulatory standards established by federal and state agencies.



**Sarah Brockway, MS**

Sarah has joined Massachusetts General Hospital in Boston, MA, as a clinical engineer. Sarah is project lead for medical equipment management through all stages of its lifecycle, including capital equipment purchasing and budget planning, evaluation of new medical device research trials, quality improvement activities, and investigating clinical incidents involving medical devices.



**Samantha Jacques, PhD, FACHE**

Samantha will be joining McLaren Health Care, Grand Blanc, MI, as the vice president of clinical engineering in January 2020. She will lead clinical engineering services for the health system which includes 14 hospitals, ambulatory surgery centers, imaging centers, a primary and secondary care physician network, and Michigan's largest network of cancer centers.

## Journal of Clinical Engineering Subscriptions for ACCE Members

The Journal of Clinical Engineering is a compilation of articles, papers, and extensive manuscripts relevant to clinical/biomedical engineering or biomedical technology. Subject matter directly relates to the engineering or technology involved in patient care and treatment or technology in the broad field of health care delivery.

ACCE members receive a discounted subscription to the [Journal of Clinical Engineering](#) for only \$99! (Originally \$313). You must [login](#) to the ACCE website



# International Committee Report

Continuing the effort of expanding ACCE's international outreach, the International Committee completed two additional mutual collaboration and assistance agreements in October. The first one was signed with Mexico's Sociedad Mexicana de Ingeniería Biomédica (SOMIB) during the VII Latin American Conference on Biomedical Engineering (CLAIB19), which was held October 3-5 in Cancún, Mexico.

This event was held with the 42nd National Conference on Biomedical Engineering (CNIB19) organized by SOMIB. Like the prior CNIBs, it was well attended with over 2,000 participants, of which ~1,800 were undergraduate and graduate students mostly from Mexico. Also present were numerous clinical engineers from Latin American countries, such as Argentina, Brazil, Chile, Ecuador, El Salvador, Colombia, and Uruguay. Other attendees included representatives from several international organizations such as IFMBE (Shankar Krishnan, president, Ratko Magjarevic, vice-president, James Goh, past-president, Marc Nyssen, treasurer, and KP Lin, secretary general) and Latin American Regional Council of Biomedical Engineering – CORAL (Eric Laciár, CORAL



Collaboration agreement signing between ACCE and SOMIB in Cancún, Mexico. Seated, left to right: Binseng Wang, Herberth Bravo and Elliot Vernet. Back row: witnesses.



Suly Chi and Binseng Wang explaining ACCE mission and activities to the attendees.



president, and Sérgio Muhlen, president-elect). ACCE had a booth at this event.

The second agreement was signed with Italy's Associazione Italiana Ingegneri Clinici (AIIC). This agreement was signed during the III International Clinical Engineering and Health Technology Management Conference (III ICEHTMC) in Rome, Italy from Oct. 21-22. This event had approximately 1,000 attendees from around the world, including Australia, Argentina, Bangladesh, Brazil, Canada, China, Croatia, France, Greece, Japan, India, Malaysia, Philippines, Singapore, South Africa, Taiwan, United Kingdom, and United States. ACCE was well represented by several members, including Board member Kim Greenwood, such



Collaboration agreement signing ceremony between ACCE and AIIC in Rome, Italy. Left to right: Stefano Bergamasco, Lorenzo Leogrando and Binseng Wang.

as Stefano Bergamasco, Saide Calil, Tobey Clark, Mario Castaneda, Yadin David, Alexandre Ferreli, Jonathan Gaev, Renato Garcia, Bill Gentle, Antonio Gibertoni, Steve Grimes, Krishnan Shankar,

Tom Judd, Kan-Ping Lin, Elliot Sloane, Mery Vidal, Binseng Wang, and Suly Chi.

The ACCE International Committee expresses gratitude to Medical Equipment Dynamics (MED), Replacement Parts Industries (RPI), Gas Latam, SOMIB and AIIC for their generous support of these activities.

Binseng Wang,  
IC Chair

[International.chair@accenet.org](mailto:International.chair@accenet.org)

# CCE Prep Column



Welcome to the new CCE Prep column. In this column we will be providing sample questions and other information about preparation for the CCE examination. The column will be written by a variety of certified clinical engineers with many years of experience, and includes those that have taught CCE Prep courses.

The sample questions are based on topics from the ACCE Body of Knowledge survey and the CCE Study Guide, version 8. Answers and rationale for the answers will also be provided.

Note that the instructors for CCE Prep courses, and the writers for this column, do NOT have any affiliation with the CCE Board of Examiners and have no access to the actual exam questions.

If you have specific topics you would like us to cover in this column, or if you are a CCE and you would like to write sample questions for this column, please contact the ACCE News editors.

## This issue's questions:

1. When a new wireless medical telemetry system is installed in the WMTS frequency bands (608 – 614, 1395 – 1400, and 1427 – 1432 MHz range) it is the responsibility of the Clinical Engineering/HTM department to ensure that:
  - a. A report is filed with the FDA to track the medical devices
  - b. The system is registered with ASHE (American Society for Healthcare Engineering) to ensure frequency coordination
  - c. Warning signs are posted regarding the increased electromagnetic fields in the building
  - d. None of the above. No registration nor warning signs are required for WMTS installations.
  
2. When a new wireless medical telemetry system is installed with products that use IEEE 802.11 standard equipment in the ISM bands (2.4 Gz or 5 GHz) it is the responsibility of the Clinical Engineering/HTM department to ensure that:
  - a. A report is filed with the FDA to track the medical devices
  - b. The system is registered with ASHE (American Society for Healthcare Engineering) to ensure frequency coordination
  - c. Warning signs are posted regarding the increased electromagnetic fields in the building
  - d. None of the above. No registration nor warning signs are required for ISM band installations.

See the correct answers and their explanations on page [12](#).

*Ted Cohen,*  
ACCE News Co-Editor  
[tedcohen@pacbell.net](mailto:tedcohen@pacbell.net)

# Perspectives from ECRI Institute: Top Ten Hazards Season, EtOhMy, and PSO Success

**ECRI**Institute  
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## Top Ten Hazards.

It's the Most Wonderful Time of the Year-Top Ten Hazards season! As America celebrated the release of our 13th annual list this past month by launching Pumpkin Spice Season, we reaffirmed the importance of reducing global alarm burden, keeping an eye on dialysis safety as it moves into the home, and, of course, basic nuts-and-bolts maintenance and upkeep. As in other years, we get by with a little help from our friends here at ECRI. Our risk and safety colleagues give us boots-on-the-ground incident and root cause reports, a bustling team of PhD researchers specializing in evidence-based medicine and a full medical library tells us what's being reported in the literature, our sourcing specialists can tell us which capital and consumables are being bought and used, and our accident investigation staff shares highlights from their CSI-style detective work. Want to get started on improving your hospital's safety?

Download your own copy of the [2020 Top Ten Hazards List](#)

## EtO in the Spotlight.

Health Devices Principal Engineer Amanda Sivek traveled to an FDA open meeting on the challenges of providing sterile medical products while ensuring environmental and public safety. Representatives from suppliers, purchasers, and public safety groups all shared their concerns and knowledge, and Amanda reported back that while EtO exposure is known to be hazardous, it is uniquely successful at an industrial scale, achieving sterility of products in their final pallet-level packaging without causing the product damage associated with ionizing radiation, heat, and steam methods. During the meeting, ECRI released a statement opposing proposed state bans on industrial-scale EtO processing, as we are concerned it will limit access to sterile care items. See more at <https://www.ecri.org/press/ecri-institute-opposes-proposed-ban-ethylene-oxide-sterilization>

## PSOs Are Showing Impact.

Is your facility part of a Patient Safety Organization (PSO)? And are you getting all you can out of it? This week, I

read good news about PSOs in a report from the Office of the Inspector General (OIG) of the Department of Health and Human Services. Patient Safety Organizations: Hospital Participation, Value and Challenges describes the results of a survey of a random sample of 600 general acute care hospitals on the value of the federal PSO program. Here are a few highlights:

### **Eighty percent of the OIG survey respondents believe that feedback and analysis provided by PSOs helped prevent future safety events.**

Every day ECRI's analysts review members' root cause analyses (RCAs) and provide feedback to help them prevent similar serious events from happening. We research questions posed by our members spanning the gamut of healthcare topics—from arterial line insertion best practices to ensuring the proper admission of patients to special care units. We scour the 3 million events in the ECRI PSO database to uncover patient safety issues and report trends in bi-weekly e-mails to our members.

**With patient safety, there's always more that can be done.** Nearly 60% of general acute-care hospitals surveyed currently work with a PSO; roughly 40% do not. If you don't know whether your facility has access to a PSO's legally protected reporting and ongoing education, ask your favorite risk manager.

Want to learn more? Check out the entire report at <https://oig.hhs.gov/oei/reports/oei-01-17-00420.asp>

As we head into the holiday season, don't be a stranger- let us know if you see a device problem, or a problem waiting to happen. We love looking into this stuff!

Erin Sparnon  
Senior Engineering Manager  
Health Devices Group, ECRI Institute  
[esparnon@ecri.org](mailto:esparnon@ecri.org)

# Welcome New Members

We welcome our newest members, approved by Membership Committee and supported by the Board of Directors:

Name	Class	Job Title	Organization	Country
Emily Sizemore	Candidate	Graduate Student/Clinical Engineer Intern	UCONN/VA Los Angeles	CA/USA
Shelby Johns	Candidate	Graduate Student/Clinical Engineer Intern	UCONN/ISS Solutions	PA/USA
Jacqueline Beltran	Candidate	Graduate Student/Clinical Engineer Intern	UCONN/Boston Children's Hospital	MA/USA
Gary Barkov	Individual	Director, HTM	Advocate Aurora Health	IL/USA
Bishal Banyat	Individual	Area Manager, Clinical Engineering	Renovo Solutions	MD/USA
James Swiger III	Individual	Biomedical Engineer	US Food & Drug Administration	MD/USA
Jennifer Cooper	Institutional/Individual	Chief Biomedical Engineering	Lexington VA Health Care System	KY/USA
Tody Cody	Institutional/Associate	TM/ENTECH Director	Banner Health	AZ/USA
Ben Stepp	Institutional/Associate	Sr. Manager, Clinical Engineering	Banner Health	AZ/USA
Jon Elmore	Institutional/Associate	TM/ENTECH Director	Banner Health	AZ/USA
Todd Lowe	Institutional/Associate	Senior Director, Technology Management	Banner Health	AZ/USA
Ed Garcia	Institutional/Associate	TM/ENTECH Director	Banner Health	AZ/USA
Stacey Parman	Institutional/Associate	BUMCP TM/ENTECH Director	Banner Health	AZ/USA
Sherman Abernathy	Institutional/Associate	TM/ENTECH Director	Banner Health	AZ/USA
Kevin Andert	Institutional/Associate	TM/ENTECH Director	Banner Health	AZ/USA
John Styers	Institutional/Associate	TM/ENTECH Director	Banner Health	AZ/USA
Jack Smiley	Institutional/Associate	Director, Clinical Engineering	Banner Health	AZ/USA
Bujji Seeram Reddi	Associate	Technical Project Manager	Sutter Health	CA/USA
Uday Rao	Institutional/Individual	Director of Medical Physics	Banner Health	AZ/USA
Shane Gilman	Institutional/Individual	Sr. Director- TM/ENTECH	Banner Health	AZ/USA
Joe Davis	Institutional/Individual	Director of Project Services	Banner Health	AZ/USA
Donald Rodrigue	Institutional/Individual	Sr. Manager-TM/ENTECH	Banner Health	AZ/USA
Brian Schuler	Institutional/Individual	Sr. Director – TM/ENTECH	Banner Health	AZ/USA
Jon Pavlicek	Institutional/Individual	Integrated Clinical Technology Director – TM/ENTECH	Banner Health	AZ/USA
Philippe Laporte	Individual	Coordonnateur, Groupe Biomedical Montérégie	Groupe Biomédical Montérégie – CISSS de la Montérégie - Venre	Québec/Canada

**Congratulations to:** Evelyn Orozco, Senior Biomedical Engineer, Sekon Enterprise, Inc. who was upgraded to Individual Level

**Welcome to our newest Institutional Member:** Banner Health





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# From the Advocacy Committee Desk



## 2020 Awards – Call for Nominations!

Please take time to nominate worthy colleagues today. Just complete this online nomination form: [https://www.surveymonkey.com/r/ACCE\\_2020-awards](https://www.surveymonkey.com/r/ACCE_2020-awards) by December 8, 2019.

Awards categories:

- Lifetime Achievement Award
- Marv Shepherd Patient Safety Award
- Challenge Award
- Tom O'Dea Advocacy Award
- Professional Achievement in Management/Managerial Excellence Award
- Professional Achievement in Technology/Professional Development Award
- Antonio Hernandez International Clinical Engineering Award
- ACCE/HTF International Organization Award
- CE-HTM Champion Award

[Past awards winners](#)

[Awards Criteria](#)



**Calling all students!**

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- Postgraduate
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**2020 ACCE STUDENT PAPER COMPETITION**

For more details, visit  
<https://accenet.org/about/Pages/StudentPaperCompetition.aspx>

## 2020 Student Paper Competition

To enter the competition:

Complete this [entry form](#) including your Division (Undergraduate, Graduate, or Doctorate)

Submit it along with a copy of your paper to [paper-competition@accenet.org](mailto:paper-competition@accenet.org)

Deadline for the 2020 paper competition is **January 26, 2020**

[Past award winners](#)



**2020 SCHOLARSHIP COMPETITION**

The American College of Clinical Engineering will award one scholarship to a student studying to become a CLINICAL ENGINEER. The Scholarship of \$1,500 will be awarded at 2020 ACCE members meeting/Awards reception in June 2020, in New Orleans, LA.

Apply by February 10, 2020.

To enter the competition, go to <https://www.surveymonkey.com/r/2020-scholarship> or scan the QR code.

Apply for  




## 2020 Scholarship Competition

Applicants must be a current (beginning in the fall of 2020) full-time, third year or above undergraduate college students, or recent college graduates who have been accepted to a graduate program seeking a career in clinical engineering/biomedical engineering/health systems engineering profession at an accredited college or university.

Submit your entry by February 10, 2020 at <https://www.surveymonkey.com/r/2020-scholarship>

[Past winners](#)

# AAMI Update

## Save the Dates

The AAMI Exchange, the year's premier health technology event, will take place June 12–15, 2020 in New Orleans, LA. For more information, visit [www.aami.org/AAMIExchange](http://www.aami.org/AAMIExchange)

The AAMI/BSI/FDA International Conference on Medical Device Standards and Regulations will be held April 20–22 at the AAMI Center for Excellence in Arlington, VA. Visit [www.aami.org/ISC](http://www.aami.org/ISC).

AAMI is launching a new webinar series for healthcare technology management professionals, called HTM Live! Visit [www.aami.org/events](http://www.aami.org/events) for these webinars and other upcoming events from AAMI.

## 2020 Grant Cycle Opens for Mary K. Logan Research Awards

The AAMI Foundation is now accepting applications for its Mary K. Logan Research Awards, a grant program aimed at supporting research that enhances the safe adoption and safe use of health technology. Recipients are eligible to receive up to \$80,000 in funding for their projects.

Topics can vary widely—focusing on, for example—device technology, processes, sterilization, dialysis, healthcare technology management and other issues. Priority is given to topics that do not have other available sources for funding. Junior investigators with strong mentorship are encouraged to apply.

Research projects should seek to:

Yield results that can be applied or used by other healthcare organizations.

Improve methods of patient safety with a defined and direct path to implementation into patient care settings.

Study problems for which deeper understanding is needed before effective solutions can be applied.

Applications for the Logan grant should be submitted no later than 5:00 p.m. ET on Dec. 31, 2019

at [www.AAMIFoundation.org/MKL-Awards](http://www.AAMIFoundation.org/MKL-Awards). To learn more about AAMI Foundation scholarships, awards, and grants, visit [www.AAMIFoundation.org](http://www.AAMIFoundation.org).

## New Projects for Sterilization and HTM Education

The AAMI Standards Board approved three new work item proposals in November—two projects in the sterilization area and one in the medical equipment management area.

AAMI ST108, Water for the processing of reusable medical devices, is a new standard that is intended to replace the technical information report AAMI TIR34:2014/(R) 2017, Water for the reprocessing of medical devices. ST108 will establish the minimum requirements for the appropriate grades of water used at different points in the medical device reprocessing sequence. These minimum requirements will help ensure successful cleaning, disinfection, and sterilization of devices and minimize the chance of device damage during processing.

AAMI TIR109, External transport of medical devices processed by health care facilities, is a new TIR that will provide comprehensive guidance on externally transporting medical devices from one healthcare facility to another healthcare facility or centralized processing plant, either for use, sterilization, disinfection, or decontamination.

AAMI EQ110, Guidance for health care technology management education programs, is a new standard that will provide a baseline for healthcare technology management (HTM) education programs that offer associate degrees in arts or a bachelor of arts degrees. EQ110 will offer a recommended framework for new or established degree programs in HTM. It will define the basic requirements for starting such a program and provide guidance on resolving gaps in existing HTM educational programs.

## AAMI Foundation Offers 10 Scholarships in 10th Year of Program

To celebrate the 10th anniversary of the Michael J. Miller Scholarship Program, the AAMI Foundation will award 10 scholarships to students pursuing a career in a

healthcare technology management (HTM) field. So far, the AAMI Foundation has awarded a total of \$99,000 to 35 students to help fund their education.

“We’ve come a long way in the last decade—from awarding two, \$2,500 scholarships to 10 scholarships at \$3,000 each in 2020,” said Steve Campbell, executive director of the AAMI Foundation. “These scholarships are vitally important to help the next generation of professionals who will ensure that health technology is both safe and effective.”

For the first time, all scholarship recipients will receive an all-expense paid trip to attend the AAMI Exchange, June 12–15, 2020 in New Orleans, LA.

“This conference experience will be a great way for the students to get to know AAMI, to network, to look for career opportunities, and to learn,” said Steve Yelton, chair of the AAMI Foundation Board of Directors.

The application process is now open for the 2020 scholarships—nine of which will be given to students studying to become HTM professionals, including biomedical equipment technicians or clinical engineers; and one to a systems engineering student. To apply, complete an online application form by Jan. 6 and include:

A short essay that details the student's career plans and demonstrate their academic excellence and technical aptitude.

Two letters of recommendation from professional contacts.

The most recent transcript and proof of admission into a healthcare technology program.

“These scholarships are possible thanks to the support of so many generous contributors,” said Campbell. “That support is going directly to the students and it's making a world of difference.”

For more information about the AAMI Foundation scholarship application or about making an individual or corporate donation to the scholarship program, go to [www.aami.org/Scholarship](http://www.aami.org/Scholarship).

(Continued on page 12)

# CCE Prep Column—Answers

(Continued from page 6)

## Correct answers:

1. b
2. d

For WMTS, The [American Society for Healthcare Engineering of the American Hospital Association \(ASHE/AHA\)](#) is designated to serve as the exclusive [Wireless Medical Telemetry Services \(WMTS\)](#) frequency coordinator. Any health care provider who wishes to use WMTS equipment at a given location must register with ASHE/AHA and provide specified information for the WMTS database. The database will record all WMTS equipment, identified by location, operating frequency, emission type and effective radiated power. It will also contain the equipment manufacturer and model number for each deployed WMTS device, as well as health care provider contact information. This database will assist authorized health care providers and equipment manufacturers in ascertaining which frequencies may be used in a given geographic area without fear of interference. Excerpt from <https://www.fcc.gov/wireless/bureau-divisions/broadband-division/wireless-medical-telemetry-service-wmts/american>

For IEEE 802.11 medical telemetry equipment:

IEEE 802.11 equipment operating in the ISM bands are not licensed nor registered. There is no requirement, nor source, for the purchasers of IEEE 802.11 ISM band equipment to register their wireless devices.

Background: IEEE 802.11-based medical telemetry uses the ISM bands (industrial, scientific, medical) at 2.4 GHz and/or 5 GHz. These frequencies and protocols are part of the IEEE 802 set of local area network protocols. They are the world's most widely used wireless computer networking standards, used in most home and office networks to allow laptops, printers, and smartphones to talk to each other and access the Internet. They are created and maintained by the Institute of Electrical and Electronics Engineers (IEEE) LAN/MAN Standards Committee (IEEE 802).

The ISM band is not dedicated to 802.11. It is widely used for other short-range, unlicensed, low power wireless communications systems such as cordless phones, Bluetooth devices, near field communication (NFC) devices, garage door openers, and baby monitors. The ISM band is also used for other industrial, commercial and consumer applications such as microwave ovens. In general, equipment operating in these bands must tolerate any interference generated by ISM applications, and users have no regulatory protection from ISM device operation.

Reference: <https://www.tek.com/document/primer/wi-fi-overview-80211-physical-layer-and-transmitter-measurements>

## AAMI Update- continued

(Continued from page 11)

### AAMI's Health Technology Collection Puts Innovation on Display

AAMI has unveiled its Health Technology Collection, museum-like exhibit housed at the AAMI Center for Excellence in Arlington, VA. The Collection displays the breadth and depth of medical devices designed to treat disease and improve the quality of life of patients.

The first 14 devices and artifacts include an infusion pump, artificial joints, and even

medical instruments used on the battlefield. All are loaned or donated by AAMI member organizations and individuals.

“The Health Technology Collection represents not only great innovations in health technology, but the many people who have dedicated their lives to developing and using this life-saving technology,” said Sabrina Reilly, vice president of membership at AAMI. “Ensuring the safe and effective use of health technology is the mission of AAMI and its global community of stakeholders. We are incredibly grateful to all who have donated so far.”

AAMI is seeking additional donations or loans of medical devices or health technology artifacts for display that demonstrate significance in standards development or improving patient safety.

If you or your organization are interested in submitting artifacts to the collection, please contact [sreilly@aami.org](mailto:sreilly@aami.org).

# World Health Organization Collaborating Center for HTM Update

The WHO Collaborating Center for HTM at the Technical Services Partnership at the University of Vermont was invited to participate in the Pan American Health Organization's (PAHO's)

11th Annual Meeting of the Health Technology Assessment Network of the Americas on November 12-13 in San José, Costa Rica. Over 500 attended the event with opening speeches by Dr. Daniel Salas Peraza, Minister of Health and Dr. Román Macaya Hayes, Chief Executive Officer, Caja Costarricense de Seguro Social – CCSS, the health system covering 90% of the population of Costa Rica. Presentations by the collaborating center were made on Key Points to Effectively Implement the Incorporation of Technologies into Health Systems and Health Technology Assessment (HTA) Applied to Medical Devices: Network Integration & Cybersecurity. The collaborating center was also invited to attend a members-only meeting on November 14 of the PAHO RedETSA network of 34 nations for the interchange of HT assessment.



Alexandre Lemgruber, Senior Adviser for Health Technologies at PAHO

At the International Clinical Engineering & Health Technology Management Congress (ICEHTMC) in Rome, Italy from October 21-22, the collaborating center received the IFMBE CED Clinical Engineering Teamwork Award. Rossana Rivas, Senior Adviser, was invited as the leader of the Latin America & Caribbean, CE – HTM Summit and had two poster sessions. Tobey Clark, Co-director, participated in a panel discussion on health technology policy with directors from five other WHO collaborating centers, chaired a session on HTM, and had two additional poster sessions.

The 4th Global Clinical Engineering Annual Congress held on October 12-13 in Nanjing, China was led by Dr. Yadin David

with notable participation by Adriana Velazquez, WHO, and Ilir Kullolli, ACCE President. Tobey Clark was also on the faculty representing the collaborating center.



At a ceremony for the event, a CE leader from China addresses the audience while Tobey Clark & Ilir Kullolli listen



Tobey Clarke presenting on Innovation & Best Practices in Clinical Engineering Education

Kenichia Charles from St. Vincent & the Grenadines is currently participating in a three-month HTM internship with the collaborating center. Kenichia recently graduated from the Biomedical Engineering Technology program at the University of the West Indies in St. Augustine, Trinidad & Tobago. Two students from UWI will be coming for internships in 2020 along with a student from EIA in Medellín, Colombia.



Kenichia Charles, CE intern

Tobey Clark  
University of Vermont  
[Tobey.clark@uvm.edu](mailto:Tobey.clark@uvm.edu)

## ACCE 2020 Membership Renewal

ACCE Membership renewal for January through December 2020 is due now.

To renew your 2020 membership online with PayPal, please [click here](#)

To renew by postal mail, please remit your renewal check (payable to ACCE) to:

ACCE/Secretariat  
5200 Butler Pike  
Plymouth Meeting, PA 19462

IT'S TIME TO  
RENEW YOUR  
MEMBERSHIP!

## Picking a Product: A new series on product selection

At some point you will need to add a piece of equipment for where you work. A new computer, test equipment or a new monitoring system for the ICU. Do you have a formal process for the selection, do you just buy a replacement, or do you aim for new solutions with new capabilities? And once you've made your decision what happens next? What about the software, enhancements and future capabilities?

The next series of articles will look at the fundamental challenges associated with acquiring new technology and will tackle these issues, among others:

- Deciding what to get
- Rollout
- Performance
- Software as a Service
- Reliability
- Security
- Service Issues

We will also talk about lifetime of equipment, end of life issues, and what do you do with it when you no longer want or need the piece of equipment.

Another topic will examine what vendors tell you before you purchase and what you can reasonably expect from them.

More to come in upcoming issues.

*Paul Coss*  
*President, The HTF*  
[coss.paul@gmail.com](mailto:coss.paul@gmail.com)

# Two Clinical Engineers and a World of Opportunities

The following is a question and answer interview of two clinical engineers who recently spent time working as Technical Advisors for the World Health Organization in Geneva.

## **ACCE Member: Jennifer DeFrancesco**

Country of Origin: United States

Role: Short-term Technical Advisor, Medical Devices Unit

Timeframe: October 2019

Current Position: System Director, Clinical Engineering for Compass One Healthcare Health Technology Solutions Division at UC Health

jenna.defrancesco@uhealth.com

## **Valeria Montant**

Country of Origin: Mexico

Role: Intern, Medical Devices Unit

Timeframe: September-December 2019

montantv@who.int

## **Where did you learn of the WHO opportunity?**

**VM-** Throughout my career as a biomedical engineer, WHO was always mentioned at one point or another in many subjects. Since then, I had been drawn to their impact around the world. I looked into their internship program and as soon as I had the chance, I applied.

**JD-** I learned of the volunteer technical advisor WHO opportunities through the International Federation of Medical and Biological Engineers Clinical Engineering Division (IFMBE CED). The IFMBE is working closely with WHO and wants collaborators to engage more deeply in that space.

They also regularly publish up-to-date information about WHO, its projects, resources and opportunities on an ongoing basis and work to align their global efforts with WHO priorities.

## **What was the most exciting part of working with the WHO?**

**VM-** Meeting all of the people that were coming and going for all of the different projects I participated in. I met at least one expert that worked somewhere else around the world every week! Also, the size of it all, knowing people in the office next door were making decisions that will affect healthcare around the world.

**JD-** It was such an honor to just step into the building where you get to see first-hand the experts globally who touch every single piece of what happens in hospitals. I was beyond grateful to be afforded the opportunity with the IFMBE-CED support as well as the gracious support of Compass One Healthcare and UC Health. My team really rallied in order to allow me to go for that period of time. As a clinical engineer, you get to touch so many parts of the hospital, and at the WHO, I was able to interact with the individuals forming that policy from those same disciplines (IST, Assistive technologies, Surgery etc.). The entire atmosphere is convivial and uplifting--and WHO's coffee is amazing in its café.

## **What are the resources WHO has for Clinical Engineers?**

**JD-** So many! The main repository is easily found through a Google search of "WHO medical devices" if you don't know where to start. I was familiar with resources in the past, but my time there opened my eyes up to the depth and breadth of the



## World Health Organization

resources available. They have resources that support medical devices from cradle to grave, but also significant resources for healthcare technology management specific needs. You can leverage their information to gain a greater understanding of the HTM space, but also regulatory requirements for medical devices and health technology assessments.

## **How can Clinical Engineers support the WHO?**

**JD-** They can use the WHO resources, promote them in use in their facilities, regions, countries, etc. They can also engage with groups like the IFMBE-CED to volunteer to support the current needs they have for projects for which subject matter experts are needed.

## **What was the best part of being able to see how the WHO works?**

**VM-** I think the best part of seeing how the WHO works is actually understanding how WHO works. The theoretical processes we can all read about them. Understanding how decisions are made on meetings, how different departments work together and following every small or big step each project has to undergo to become public.

**JD-** It is unbelievable in the breadth and scope of how global policy and resources are pulled together. Just like a hospital

*(Continued on page 16)*

# Two Clinical Engineers and a World of Opportunities (continued)

(Continued from page 15)

setting, interdisciplinary teams work together to solve problems and create publications, resources, agendas etc. It was also amazing to see how they leveraged “field” resources from all over the world to get the best product and review of projects, proposals etc. Like many regional or national healthcare systems, field-based subject matter experts play a large role in ensuring that the resources produced are on target and pertinent with the current global climate and patient needs.

**What was your favorite thing to do in Geneva?**

**VM-** My favorite thing in Geneva was the international ambiance the city offers.

After walking around for 15 minutes downtown you will hear at least 10 different languages. You can't forget you are in Switzerland because of the mountainous skyline, but at the same time, because of the people you meet, if you closed your eyes you could easily be transported to another country.

**JD-** I would always try to get out in time to see the sunset at around 7:30 pm over the lake. No matter where you were taking it in from around Geneva, it was amazing! The people there are kind, and the city is warm and inviting to outsiders.

**Were you able to do any traveling during the weekends?**

**VM-** Maybe a little too much. Not only does Switzerland have a lot to offer in any season, but you are also in the center of Europe. Jumping on a train or a bus and crossing the border to any of the five countries that it shares its borders with is very easy and the sights are compelling.

**JD-** I attempted to cram everything I could in Saturdays and Sundays, including hiking glaciers, waterfalls and mountains as well as kayaking in glacial water. I traveled within Switzerland, France and Italy during my two weekends there. The beauty of the area is really indescribable.

## Educational Committee Report

**Special thanks** to our Project Management 101 presenters Bujji Seeram Reddi and Ray Laxton, for giving us a practical yet in depth approach to project management in clinical engineering. We would also like to thank Carol Davis-Smith for another insightful presentation on Acquiring Medical Devices, the new AAMI Acquisition guide and how it pertains to Clinical Engineering.

### URGENT 11

On October 24th the ACCE Education Committee hosted a complimentary webinar for the Urgent 11 vulnerabilities disclosed by Armis.

The Urgent 11 vulnerabilities are a list of 11 zero-day vulnerabilities affecting a wide array of devices utilizing VxWorks, including printers, medical devices, network components and many more. It is estimated to affect nearly 2 billion devices worldwide are affected. More information is available at the Armis website including a

free tool to scan your network. (<https://www.armis.com/urgent11/>)

During the presentation Ben Seri, VP of Research at Armis Security discussed how the vulnerabilities were discovered, disclosed, and how they were utilized to lock out users from interacting with an infusion pump at the DEVCON Biohacking Village.

In addition to determining what devices are affected Ben included recommendations to minimize risks with updating to the most recent version 7 of VxWorks, which has remediated the vulnerabilities, as well as preventing access using Intrusion Detection Systems and Firewalls, and finally using network segmentation.

This vulnerability disclosure is one of the largest not pertaining to a windows operating system, and as noted by Glynn Stanton, CISO Yale New Haven Health, this provides confirmation that we know devices are vulnerable, there is no inherent safety in the embedded operating systems.

Nastassia Tamari, Assoc. Director, Information Security Cybersecurity Incident Management at BD, confirmed that though the BD alaris pump was proven to be vulnerable, the device does not turn off, or allow remote changes to delivery volumes, and the known vulnerabilities cannot be used for a mass attack.

Additional Resources regarding the Urgent 11 Vulnerabilities have been released by the FDA as well as the Department of Homeland Security.

<https://www.fda.gov/medical-devices/safety-communications/urgent11-cybersecurity-vulnerabilities-widely-used-third-party-software-component-may-introduce>

<https://www.us-cert.gov/ics/advisories/icsa-19-274-01>

Eric Aring  
Education committee co-chair  
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# Webinar News

## CCE Review Webinar Series

ACCE hosted a 10 week CCE Review webinar series, from August to October, sponsored by Asimily.

We thank the faculty: Matt Baretich, Tobey Clark, Ted Cohen and Frank Painter. This group annually takes time out of their busy schedules to teach this series and guide individuals studying for their CCE exam. Thank you also to members: Elien Engels and Joe Ouellette, who volunteered to moderate the 2019 CCE Review Webinar series. This is the second year that Joe is doing this and first year for Elien, and ACCE is very thankful for all of their work and efforts.



Elien Engels of Yale New Haven Health



Joe Ouellette of Yale New Haven Health

## Panel Discussion for Supporting and Replacing Out-of-Support OS, December 12, 2019.

There is still no clear definition for legacy equipment nor is there a simple solution to the problem of supporting equipment with an out-of-support operating system. Replacement may simply not be an option due to the associated capital cost and even the latest equipment may present similar challenges. Supporting older equipment can quickly become problematic and practical steps are required to manage this burden, after all, one of the biggest examples with Windows 7 end-of-support is fast approaching. As an industry we need to discuss this issue and come up with actionable solutions for HTM.

To register for this session go to <https://accenet.org/NewsEvents/Pages/Webinars.aspx>

**ACCE** December Educational Webinar  
**Panel Discussion for Supporting and Replacing Out-of Support OS**  
December 12, 2019, 12 pm - 1pm (ET)

**David Soffer, CBET**  
Medical Equipment I.S. Specialist  
WellSpan Health

**Chad Waters**  
Senior Cybersecurity Engineer  
ECRI Institute

**Keith Whitby, MBA/HA**  
Section Head/HTM  
Mayo Clinic

# Webinar News– Continued

**Free Webinar: New version of MDS2**, sponsored by HTA, joint alliance of AAMI, ACCE and HIMSS, December 19, 2019.

Learn about the new version of the Manufacturer Disclosure Statement for Medical Device Security (MDS2) form and why it's important for your organization. This interactive 90-minute session will provide insights about major changes in the MDS2 form, answer your questions, and offer practical guidance for both medical device manufacturers and healthcare technology management (HTM) professionals. The new MDS2 form provides medical device manufacturers with an even more effective means of disclosing the security-related features of their products. Healthcare providers can use additional information provided in the new form to better assess and manage the medical device security vulnerabilities and risks. Sponsored by HTA – a joint alliance of AAMI, ACCE, and HIMSS.

For more information and registration information go here: <https://my.aami.org/store/events/registration.aspx?event=HWHT191219>



The banner features the Health Technology Alliance logo on the left, which includes the text "Health Technology ALLIANCE" and "Advancing the Safety and Security of Devices and Systems". On the right, a blue box contains the text "December Free Webinar" and "Thursday, December 19, 2019/ 1pm-2:30pm (EST)". Below this, a white rounded rectangle contains the title "New version of Manufacturer Disclosure Statement for Medical Device Security (MDS2) form and why it is important to your organization". At the bottom, two headshots are shown: Steve Abrahamson (GE Healthcare) on the left and Stephen L. Grimes (Strategic Healthcare Technologies Associates) on the right.

**Webinar: The Joint Commission Updates**, January 09, 2020.

The Joint Commission (TJC) Director of Engineering will present 2020 updates related to clinical engineering and answer questions from the audience.

To register for this session go to <https://accenet.org/NewsEvents/Pages/Webinars.aspx#accetele>



The banner features the ACCE logo (American College of Clinical Engineering) on the left. The main title is "January Educational Webinar" and "The Joint Commission Updates". Below the title, the date and time are listed: "Date/Time: Thursday, January 09, 2020 12:00pm - 1:00pm (ET)". The presenter information is: "Presenter: Herman A. McKenzie, MBA, CHSP Director, Department of Engineering". The Joint Commission logo is at the bottom left. A headshot of Herman A. McKenzie is on the right.



**We wish you all a Joyous Holiday and a Happy New Year!**

*Jim Keller, Ted Cohen, Ismael Cordero, Suly Chi*

The ACCE News Editorial and Circulation Team

## ACCE Calendar

For event details and links go [here](#).

### 12/08/2019

Last day to submit your nomination for ACCE 2020 Advocacy Awards

### 12/12/2019

Panel Discussion for Supporting and Replacing Out-of-Support OS

### 12/16/2019

HIMSS20 registration: Early Bird rate ends

### 12/19/2019

Free Webinar: New version of MDS2, sponsored by HTA, joint alliance of AAMI, ACCE and HIMSS.

### 01/09/2020

Webinar: The Joint Commission Update

### 01/26/2020

Last day to enter the 2020 Student Paper Competition

### 02/10/2020

Deadline to submit nominations for 2020 CE Hall of Fame

### 03/04/2020 – 03/0/2020

SABI2020 - Argentine Congress of Bioengineering and Argentine Conference of Clinical Engineering  
Piriapolis, Uruguay

### 03/9/2020 - 03/13/2020

HIMSS 2020  
Orlando, FL

### 03/9/2020

ACCE CE-IT Symposium  
Orlando, FL

# ACCE

AMERICAN COLLEGE OF CLINICAL ENGINEERING

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