

ACCE News

Newsletter of the American College of Clinical Engineering

November-December 2018

Volume 28 Issue 6

President's Message



Greetings from California!

Happy Holidays and Best Wishes for 2019. A momentous year of many ACCE activities is almost over. ACCE Board and its committees are already busy planning more great events for our membership next year.

Advocacy Committee is busy reviewing your nominations for the 2019 ACCE Advocacy Awards. The awards will be presented in Orlando, FL in February 2019 at the HTA/ACCE Meeting/Awards reception during HIMSS 2019 and in Cleveland, OH in June 2019 at the ACCE Members' Meeting/Awards Reception during AAMI Conference. This year the Student Paper Competition will be in three categories undergraduate, masters, doctorate and is open to all nationalities (US, Canada & International). Clinical

Engineering students who want to showcase their extraordinary talents. We have also launched a new "ACCE Student Scholarship." ACCE will award one scholarship to a student studying to become a Clinical Engineer. The scholarship of \$1,500 will be awarded at the ACCE members meeting/awards reception in June 2019, in Cleveland. [Application](#) are due to ACCE by February 10, 2019.

The Education Committee is busy preparing for the ACCE Clinical Engineering Symposium at AAMI 2019 in Cleveland, OH. Details will be announced in the Jan/Feb issue of ACCE News.

The FDA Public Workshop on Servicing and Remanufacturing Activities was held on Dec 10-11, 2018. Several ACCE FDA Task force members including Binseng Wang, Barbara McGuire, David Francoeur and Samantha Jacques represented ACCE at the workshop: on Day 1, Binseng Wang represented ACCE at the Guiding principal panel and on Day 2: Samantha Jacques represented ACCE at the Collaborative communities Panel. This task force will continue the work to draft the ACCE comments on Servicing versus Remanufacturing white paper to be submitted by end of January, [docket No. FDA-2018-N-3741](#).



Collaborative communities panel: Samantha Jacques (4th from right)



From left to right: Dave Francoeur, Barbara Maguire, Binseng Wang

Happy Holidays from ACCE!

In this Issue:

Perspectives from ECRI [2](#)

HTF News [4](#)

Graduate Education in CE [6](#)

Welcome New Members [6](#)

Trillium Health Partners Introduces Students to the Field of BME [8](#)

AAMI Update [9](#)

2019 CE Hall of Fame Nominations [10](#)

The Ethics, Morals, and Merits of Mentoring [11](#)

Mentoring from the Outside-In [12](#)

WHO Collaborating Center for Health Technology Management Update [12](#)

Exciting Future for CE in Mexico [13](#)

ACCE at HIMSS19 [14](#)

(Continued on page 2)

President's Message (Continued)

(Continued from page 1)

ACCE is hosting the 2019 ACCE CE-IT Symposium pre-HIMSS19: [Safe and Effective Application of Networked Medical Systems](#), on February 11, 2019; 9am-4:30pm (EST). [Click here to Register](#). Join fellow clinical engineers, clinical system engineers, information technology experts, and others in health technology management for this full day symposium where attendees will learn topics as medical device security, disaster recovery planning, safe networking on medical equipment and systems, long term capital planning, emerging technologies and their impact on the hospital operations. The speakers for this symposium include: Julian Goldman, Juuso Leinonen, Michael Fraai, Bridget Moorman, Sue Wang, Christopher Nowak, Carol Davis-Smith,

Jennifer Ott, and Tom Skorup.

Please welcome Larry Fennigkoh and Binseng Wang who recently took over as Chairs of Mentoring Committee and International Committee respectively. We look forward to both Larry and Binseng's leadership as they further enhance the great work done by both committees.

I look forward to hear from the membership about their thoughts in promoting the profession and ideas to further enhance the activities offered by ACCE.

Until next year.

Arif Subhan
President, ACCE
president@accenet.org

ACCE News

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

Managing Editor

Jim Keller
jkeller@ecri.org
(610)825-6000

Co-Editors

Ted Cohen
tedcohen@pacbell.net
Jared Ruckman
jared.ruckman@live.com

Circulation & Address Corrections

Suly Chi, ACCE Secretariat
Secretariat@accenet.org

Advertising

Dave Smith
advertising@accenet.org

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

To subscribe e-mail Secretariat@accenet.org
Copyright © 2018 by ACCE

Perspectives from ECRI Institute

It's the most wonderful time of the year!

It's Top Ten Hazards season, of course. This year's rogue's gallery of things not to do and things to hope your clinicians aren't doing includes some familiar issues like improper cleaning of patient mattresses and cybersecurity, but also some perennial concerns that haven't gotten as much attention as they should have.

1. [Keep it Clean](#): once flexible endoscopes have been cleaned and disinfected, keeping them safe for use requires careful adherence to proper handling and storage practices. Failure to do so can recontaminate previously disinfected scopes, heightening the risk of patient infections. What have we seen?
 - a. Users forget to flush the channels with clean air after reprocessing, leaving a nice, wet environment that allows rapid proliferation of the few remaining viable microbes that survived high-level disinfection.
 - b. Users forget to put on clean gloves when indicated. For example, donning gloves to load a scope into an automated endoscope reprocessor after manual cleaning, and then using the same gloves to remove the scope after high-level disinfection.
 - c. Users place reprocessed scopes on unclean surfaces during transport or storage.
2. [Dose rate or flow rate? A killer question](#): We still see harm and death related to mis-entry of infusion pump programming parameters, notably entering the intended flow rate into an infusion pump's dose rate field or vice versa. Dose rate defines the amount of drug entering the patient and is expressed in mass units like mg/hr or mg/kg/hr, while flow rate defines the amount of fluid entering the patient and is expressed in volume amounts like ml/hr. While both dose and flow rate are included in medication orders, mix-ups are more likely if the order of information within the medication order doesn't match the order in which the infusion pump expects parameters. Clinicians tell us that such wrong-field programming errors occur relatively frequently (though such errors often go unreported), and "smart pumps" with drug libraries will not catch mis-entries that still fall within dosing limits. The effects can range from mild (e.g., procedural delay from failure to infuse an antibiotic as quickly as desired) to catastrophic (e.g., death from overdelivery of an opioid).
3. [Patient lifts need love](#): We've seen reports of injury and damage due to improper design, installation, or use of ceiling-mounted patient lifts. What's been causing headaches?
 - a. Suppliers or installers choose hardware that can't

(Continued on page 3)

Perspectives from ECRI Institute (Continued)

(Continued from page 2)

support the specified load, like a ceiling bolt design with insufficient weight capacity to hold up the motor, the track, the sling and all accessories, and a full-sized patient.

- b. Installers or repair technicians assemble or re-assemble most (but not all) of the pieces, or choose the wrong accessories, or mount it in the wrong space or orientation altogether.
- c. The lift motor isn't properly vented, leading to overheating and failure.
- d. Users who exceed the specified weight or choose the wrong sling for a particular patient condition.

- e. General neglect and inattention if lifts aren't part of a regular inspection and maintenance program, or if there is insufficient pre-use inspection and testing.

Want more stories behind the headlines? Look up the December 12 Health Devices Webinar on the Top 10 list at https://www.ecri.org/events/webinars/Pages/HD_2019_Top_10_Webinar/12-12-18.aspx?tab=1 or check out the list itself at https://www.ecri.org/components/HDJournal/Pages/2019_Top_10_hazards.aspx

And, as always, keep in touch with your device headaches and hassles.

Erin Sparnon, MEng
Senior Engineering Manager, Health Devices, ECRI Institute
esparnon@ecri.org



2019 ACCE 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 2019 ACCE members meeting/Awards reception in June 2019, in Cleveland, Ohio.

Apply by February 10, 2019.



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

Healthcare Technology Foundation News

A common thread of these updates has been related to disaster readiness and your responses. This article will be about disasters involving animals. Not the kind that result in ruined rugs, beds, and sofas, but the large scale disasters where people need to leave their homes to seek shelter due to fire, weather, flooding, or other situations.

I have spoken of having a “go bag”, which is a bag or suitcase with copies of all your key papers, medications, phone chargers, and enough food and water for three days. The rule of thumb is that you will need to be relatively self-sufficient for three days until help arrives or some degree of support is available. Some experts say you need three weeks of meds and special equipment as the scope of some recent disasters have pushed the timeline out. Think about the fires in California: Will there be a house to come home to? What do you need for at least three days?

During Hurricane Katrina many people did not evacuate when ordered to because shelters would not accept people with animals. People would not leave them behind and there were a number of deaths as a result. The law was changed and since then communities are required to have a plan to deal with people and their animals. I am a member of a medical response team that provides shelters during disaster and we practice setting up places for people and places for animals. We have crates, blankets and basic food for our four legged friends.

You need a go bag for your pets as well. Include important papers, any meds you need, food, and a carrier for your pet. My vet suggests a simple muzzle as dogs react to stress just like people do and no one wants to get bitten. You don't want the dog's first experience with the muzzle to be in an emergency, so familiarize yourself and your dog with the muzzle.

Dogs in general are easy to transport. If you have a crate, bring it with you. The shelter will run out quickly. If needed, some dogs can stay in a car, but that is not an option when it is hot or cold outside. You would like your dog to be in the shelter if possible.

Cats on the other hand can be a challenge.

My cat intrinsically knows when I am looking for it and can turn invisible. If you only have 15 minutes to get out, how long do you want to spend looking for a creature that has 9 lives? The people in the recent fires in California had only minutes to get out. Just long enough to find their car keys and leave. So get the dogs in the car, leave some food and water for the cat and evacuate with your go bags.

Exotic animals are a little bit of a challenge in that not every shelter may be ready to accept them. So it is worth checking in advance. The shelter I work with has a room for dogs, and a room for cats, but we really try not to put them together if at all possible. Also, if you are paying attention, you just realized your animals will be in another room and times for visiting them may be limited.

My sister has a tarantula and scorpions. She routinely lets them crawl on her arms to show how safe and wonderful they are. Not everyone shares her love of these pets, so check with your shelter and think about a Plan B, and have a go bag with food and such for them. I promise you we don't have any food for them at our shelter. Snakes, lizards, and other exotics all fall into a special pre-plan category. You need to think what you are going to do, before you have to respond.

Birds are pretty straightforward as they usually live in a moveable house. Again papers, food, and meds are what you need. Check if you can bring them. Fish are also a challenge. How to transport, what to do when you get to the shelter, and so on are issues you need to preplan. When I had fish, all I had to do was look at them wrong and they would go belly up. So I cannot imagine trying to move them, and manage them in a shelter. You wanted a bigger aquarium and new fish anyway!

My local vet works with the shelters in our area. They take in injured animals, and those needing special care. My vet and several others are very involved in our shelter program and have been an amazing resource when we have had our local disasters, usually ice storms that take out power in a fairly rural location. We recently had a gas line



Improve healthcare delivery outcomes
by promoting the development,

application and support of safe and
effective healthcare technologies.

over pressurization that blew up a couple of houses; set fire to 15 or 20 and caused mass evacuations. When you smell gas and the house across the street is now in pieces, one is well motivated to get out. So where are those darn leashes and how quickly could you really evacuate? Two people died as a result of this disaster and many people are either not back in their homes or have no heat, hot water, or stove. It is cold in the Boston area right now.

I have scanned and copied my important papers to the cloud. This will allow me to recreate my banking, insurance, and legal documents. Recreating passports, birth, wedding, and death certificates is a challenge. If you have a copy, at least you have a head start.

Large animals have special issues. When I had horses, (I have had most every type of critter you can imagine) we really had no way to move them. We did not have a horse trailer or truck, so quick evacuation was not feasible. If you have ever dealt with a really unhappy horse—getting them into a trailer can be a real non-starter. If you have transport—where do you take them? In many areas, people spray paint their phone numbers on the horses and leave them to fend for themselves. Sometimes that works, but many times hazards hidden by flood waters traps or injures them. We would not have left them, but we also never had to face the flames that are currently burning much of California.

The TV images of abandoned animals, dogs tied to porches or trapped in cage as flood waters rise haunt me, although I will never know the situations the people faced to

(Continued on page 5)

Healthcare Technology Foundation News (Continued)

(Continued from page 4)

make such a hard decision. As well, the stories of people who died because they would not leave their animals is also just as heartbreaking.

I urge you to plan ahead, know who might be setting up the shelters, where they might be set up and if possible volunteer to help. I had a friend who worked at a hospital in New Orleans during Katrina. The hospitals ended up setting up care for clinical staff's elderly parents, children, and animals. Some

of the pictures are amazing. If you work at a hospital, do you have a plan?

Have a wonderful holiday season. Be safe and be prepared!

Paul Coss, RN
President, HTF
president@thehtf.org

HTF Future Projects

Have a great idea to share? Please let us know if you have any suggestions on projects for HTF that will meet our mission.

Be sure to visit the HTF website, 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!

Jennifer C. Ott, MSBME, CCE, FACCE
Secretary, HTF
secretary@thehtf.org

ACCE 2019 Membership Renewal

Thank you for being an ACCE member! ACCE Membership Renewal for January through December 2019 is due now.

To renew your 2019 membership online with PayPal, please [click here](#) or go to <https://accenet.org/Members/Pages/default.aspx?from=login>.

To renew by postal mail, please remit your renewal check to:
ACCE
5200 Butler Pike,
Plymouth Meeting, PA 19462

If you need an e-invoice, please contact ACCE Secretariat at secretariat@accenet.org

[Membership benefits](#)

IT'S TIME TO
RENEW YOUR
MEMBERSHIP!

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 \$265). You must [login](#) to the ACCE website to view the code. Then visit LWW.com to enter code.



Graduate Education in Clinical Engineering

The Clinical Engineering Graduate Program at the University of Connecticut is entering a new era. The educational format is transitioning from on-campus classes to distance learning with discussion boards, video lecture segments, remotely proctored exams and student presentations via WebEx. What does this mean for students?

Internships

With less travel involved, this opens up the possibility of clinical engineering internships at hospitals across the country. UCONN currently has eight students who are in the process of or have recently completed their internships in California alone. This new teaching format now allows hospitals anywhere in the country to participate in the Clinical Engineering Internship Program. More information about the clinical engineering internship path to an MS BME degree is at the link: <https://www.bme.uconn.edu/clinical-engineering-2>.

Distance Learning

In addition to changes affecting the internship program, UCONN has started a distance learning program for practicing clinical engineers. If an engineer has a BS degree and has been a practicing clinical engineer for three years, he/she is eligible to apply to the new program. This distance learning graduate program awards a Masters of Engineering in Clinical Engineering (MEng CE) degree. Students in this program take ten graduate level courses, one per semester and graduate in about 3 ½ years. More information

about the distance learning program is provided at the link: <https://masterofengineering.uconn.edu/clinical-engineering/>. If there are questions about this distance learning program, please contact Frank Painter (frpainter@engr.uconn.edu) or David Kaputa (david.kaputa@uconn.edu).

Graduating Clinical Engineers

Current second year students will be graduating in May with an MS degree and will have completed a two-year internship. These eleven young clinical engineers are available to interview for any openings you may know about or have in your department. Their resumes are listed on the website www.ceeducation.org. If you are aware of any openings or would like to come to the UCONN campus to interview the whole class, please contact Frank Painter (frpainter@engr.uconn.edu).



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
Scot Copeland	Individual	Medical IT Network Risk Manager	Scripps Health Biomedical Engineering	MD/USA
Rebecca Halmich	Candidate/Student	Graduate Student/Clinical Engineering Intern	UCONN/UMASS Memorial Medical Center	MA/USA
Richard Eliason	Institutional/Individual	Director Compliance	Crothall Healthcare	NC/USA
David Miller	Institutional/Individual	Biomedical Engineer	VA-North Texas Health Care System	TX/USA
Jesus Enrique Quintero Lopez	Individual	Biomedical Infrastructure Manager	Hospitales Starmedica	Mexico

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. Send manuscripts to William or Michael Leven-Epstein at: michael.levinepstein@gmail.com

RTLS Needs A New Approach. And, We Found It.

Our IoT Platform delivers Real-Time Location Services services and more - and cost-effectively scales across the entire hospital.

Our innovative approach places advanced IoT sensors in each light fixture in the hospital. The density of sensors produces reliable data, and by making each light intelligent, generates energy savings that can be used to pay for the RTLS infrastructure.



JOIN US AT HIMSS19
Visit booth #8050
to see it in action.

enlighted[™]
A Siemens Company



enlightedinc.com

Trillium Health Partners Introduces Students to the Field of Biomedical Engineering

Trillium Health Partners (THP) is one of the largest community-based acute care facilities in Canada. Comprised of the Credit Valley Hospital, Mississauga Hospital, and Queensway Health Centre, THP serves the growing and diverse populations of Mississauga, West Toronto, and surrounding communities.

Every year, THP is proud to take part in Take Our Kids to Work Day. It's an exciting opportunity to introduce high school students to the daily activities of THP moms and dads and the many different career opportunities that exist in healthcare. At each event, grade nine students are invited to participate in presentations and activities that provide a firsthand look at departments across the organization, and emphasize the importance of life-long learning.

As part of the 2018 Take Our Kids to Work Day, students had a chance to learn from THP's Biomedical Engineering Department, made up of 18 Biomedical Engineering Technologists and Clinical Engineers who support diagnostic imaging, treatment and therapy, life support, monitoring, and more.

The Biomedical Engineering Department plays a vital role at THP, and the group was excited to share how they contribute to the delivery of high quality care and exceptional experiences.

Meeting the Team

Faye Eduave and Francisco Espino, two Biomedical Engineering Technologists from THP's Mississauga Hospital, kicked things off by introducing the team, explaining where the departments are located in each hospital and outlining the role they play in the delivery of care.

They went on to explain the roles and responsibilities of a Biomedical Engineer, how a typical workday may unfold and the importance of patient safety. They were pleasantly surprised that during the Q&A period, students were interested in learn-

ing more about the advancements in technology and the future of medical devices and equipment.



THP's Biomedical Engineering Technologists and coop students. (L to R): Nicholas Morrison, Reza Honarvar, Clinton Chen, Stephanie Hanin, Francisco Espino, Ryan Zhang, Faye Eduave and Elizabeth Rendon-Lopez.

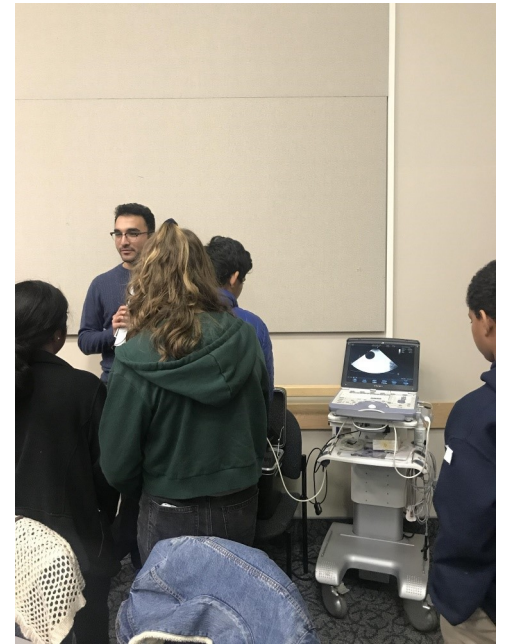
An Introduction to Medical Equipment

Next up, students had the opportunity to learn about different pieces of medical equipment that are key to the function of Clinical Engineers and Biomedical Engineering Technologists.

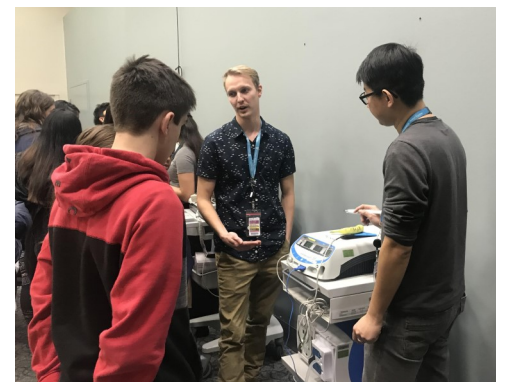
Reza Honarvar showed the students how a GE VIVID I ultrasound works. He began by explaining the function of sound waves and described the relation of space and sound. Reza scanned his heart and showed students live images of his heart and valves, as well as different type of phantoms such as a baby in womb.

Students were excited to test out their cautery skills using ConMed's System 5000™ Electrosurgical Generator (ESU) under the careful eye of Nicholas Morri-

son, Biomedical Engineering Technologist at THP's Credit Valley Hospital and Ryan Zhang, Biomedical Engineering Technologist at THP's Queensway Health Centre. Students learned important information about how the device works, different functions and safety features, and how THP's Biomedical Engineering Department deals with these devices on a daily basis.



The GE VIVID I Ultrasound on display for students to use on themselves as Reza Honarvar, coop student at THP's Queensway Health Care provides an in depth explanation of its function and use.



Nicholas Morrison explaining how Biomedical Engineering Technologist handles critical issues in the OR and Ryan Zhang showing how the ConMed System 5000 Electrosurgical Generator is used on a banana.

(Continued on page 9)

Trillium Health Partners Introduces Students to the Field of Biomedical Engineering (Continued)

(Continued from page 8)

Although the grade nine students may forget some of the facts regarding this device, there is no doubt that they'll remember getting a chance to actually use the power generated by the ESU with the safety precautions of Covidien's RapidVac SE3690 Smoke Evacuator.



Students waiting in line to try the Philips MP5 vital signs monitor and get their blood pressure reading with the assistance of Elizabeth Rendon-Lopez.

"I enjoyed seeing their eyes light up as they cut through a banana using the device for the first time" Nicholas says.

Elizabeth Rendon Lopez, Biomedical Engi-



Stephanie Hanin and Clinton Chung, second term coop students at THP's Mississauga Hospital, demonstrating how to operate a critical live-saving Philips HeartStart FRx AED in the event of an emergency.

neering Technologist at THP's Credit Valley Hospital demonstrated the functions and features of the Philips MP5 vital signs monitor. Students had the opportunity to check their oxygen concentration and blood pressure, as well as learn how the heart rate from the GE MAC5500 HD ECG is checked using a patient simulator.

Using a common AED from Philips HeartStart FRx, found throughout the hospital, Stephanie Hanin and Clinton Chen demonstrated step-by-step how to operate one in

the event of an emergency. With the use of a patient simulator, they displayed what a normal ECG waveform looks like compared to one with ventricular fibrillation.

They tested each scenario with the AED to prove that it successfully analyzes each situation to determine whether or not a shock is advised. The ECG waveforms were shown using a Medtronic LifePak 20 Defibrillator with its built-in screen commonly found on crash carts.

Sparking an interest in biomedical engineering

Having met the team, learned about the field, and interacted with leading technology, the students had a chance to reflect on the day and ask any outstanding questions.

"I was happy to see that many of them had questions related to becoming a Biomedical Engineer," Francisco explains. "This was great way for students to be introduced and to learn more about other opportunities in health care that might not be as well known."

*Sara Salari, PEng, MMSc, ACCE Member,
Corporate Manager, Biomedical Engineering
Trillium Health Partners
Sara.Salari@thp.ca*

AAMI Update

AAMI Expands Global Portfolio

With two new agreements, AAMI is taking a more active international role in training and education for the health technology community.

In India, AAMI has a Memorandum of Understanding with the Indian Biomedical Skill Consortium to enhance the professional development of biomedical engineers and healthcare technologists through education programs and certifications.

The partnership is an integral part of a major public-private initiative to spur the

healthcare technology industry in India. The government there is funding a massive industrial park dedicated to medical equipment, devices, and products, from R&D to manufacturing to talent development, according to AAMI's Brad Schoener, vice president of innovation.

"The idea is to develop R&D capabilities linked to manufacturing facilities linked to government purchasers and regulators," said Schoener. "They expect to attract over 250 medical device manufacturers in the next two years."

In Singapore, AAMI is collaborating with the Singapore Manufacturing Federation (SMF) to deliver educational programs, certifications, and events for the Singapore medical device industry.

SMF, a nonprofit organization established in 1932, champions Singapore manufacturing. With more than 3,000 corporate members, SMF has strong links with the nation's government.

"AAMI is encouraged by the strong support of Singapore's government, their med-

(Continued on page 10)

AAMI Update (Continued)

(Continued from page 9)

ical device manufacturing community, and by the Singapore Manufacturing Federation,” Schoener said. “AAMI is looking forward to a strong and mutually beneficial relationship.”

The Statement of Intent between the two organizations calls for “promoting increased technical and educational ties between U.S. and Singaporean companies.” The agreement also calls for promotion of several “priority sectors,” including standards for medical technology and innovative startups in the industry.

Top Innovation Strategist, Futurist to Headline AAMI Exchange

Nicholas Webb, a top innovation strategist, futurist, award-winning inventor, and bestselling author, will help to kick off the new AAMI Exchange this June, serving as the opening Main Stage speaker. The Exchange is the name for AAMI’s growing and revamped Annual Conference & Expo.

Webb, CEO of Lassen Innovation, works with Fortune 500 companies throughout the world to help them lead their industries in innovation, strategy, and customer experience (CX) design. In healthcare, Webb speaks to audiences across the entire healthcare ecosystem on the future of healthcare in the face of changes driven by

the Affordable Care Act, the consumerization of patients, and the impact that disruptive innovation is having on both clinical and business models.

Webb helps organizations understand and, most importantly, be relevant in the fast-moving and hyper-connected future. In his recent body of research, he discovered the four key trends that will determine the success of any enterprise, from entrepreneurial startups to Fortune 500 companies. He helps his clients and audiences understand the trajectory of change so that they can take the insights from his talk and apply it in their business to ensure their relevance in the future.

Webb has been awarded more than 45 patents by the U.S. Patent and Trademark Office for breakthrough technologies, ranging from one of the world’s smallest medical implants to state-of-the-art wearable technologies. His most recent book, *What Customers Crave*, is used by top brands to design their CX and innovation strategies.

To learn more about the AAMI Exchange and to register, please visit www.aami.org/aamiexchange.

AAMI Publishes Second Edition of HTM Benchmarking Guide

The second edition, authored by four long-time AAMI members, applies lessons

learned from AAMI’s HTM Benchmarking Task Force. This includes a new emphasis on “the importance of appropriately allocating corporate-level HTM expenses to individual facilities within a multiple-facility system,” according to the preface. “Systems are the new norm.”

Another new focus is “the need to distinguish (a) equipment maintenance expenses from (b) engineering and project-related expenses,” according to the preface. The latter category is where HTM is growing.”

Finally, to supplement the long list of metrics from AAMI’s online Benchmarking Solution, which has been decommissioned, the authors propose refinements in the definitions of a short list of key performance benchmarks.

The authors of the updated *HTM Benchmarking Guide* are Ted Cohen, clinical engineering consultant and retired manager of clinical engineering at the University of California, Davis, Medical Center; Frank Painter, adjunct professor of biomedical engineering, University of Connecticut; Matt Baretich, president and CEO of Baretich Engineering; and David Braeutigam, president of Braeutigam Enterprises LLC.

This guide is available to download at no cost at www.aami.org/BenchmarkingGuide.

AAMI Staff

2019 Clinical Engineering Hall of Fame Nominations are Open

Nominations for the Clinical Engineering Hall of Fame (CE-HOF) are open until February 10, 2019. If you want to nominate someone for this prestigious honor, you can download the Nomination Form and instructions at <https://accenet.org/HallofFame/Documents/CE-HOF%20Nomination%20Form.pdf>.

The **CE-HOF** was established by ACCE to help the wider healthcare profession and

general public better understand the clinical engineering profession. It is an outward-facing virtual museum that tells the story of clinical engineering, from its beginnings in the late 1960s to the present day, by honoring the visionaries, leaders, and luminaries who have contributed to the creation, evolution, and advancement of the profession. Additionally, the CE-HOF allows students and others who are interested in exploring clinical engineering as a profession to understand and appreci-

ate the challenges and rewards in pursuing this career.

The rules governing nomination to the CE-HOF are straightforward. Any person, alive or deceased can be nominated for induction into the CE-HOF, regardless of age, sex, race, nationality, residency, education level, years of experience, and membership within ACCE (i.e., non-

(Continued on page 11)

Hall of Fame Nominations (Continued)

CLINICAL ENGINEERING Hall of Fame

(Continued from page 10)

ACCE members are acceptable).

The essential requirement for induction into the CE-HOF is that the individual has contributed in a meaningful way to the initiation, evolution or advancement of the profession. Awards, honors, leadership positions, certifications, publications, presentations, etc. are not sufficient by themselves to warrant induction, although they may be cited as supporting evidence of the nominee's contributions. A more complete description of the requirements is contained in the Nomination Form Instructions.

In addition to the completed Nominations Form, at least three letters of support from well-known clinical engineering professionals are required; extensive evidence to support the nomination is expected. Self-nomination is not acceptable.

All nominations will be reviewed by the CE-HOF Nominations Review Committee for completeness and adherence with the essential requirements and qualifications for nomination. Up to three Nominees, selected by the CE-HOF Nominations Review Committee, will be submitted for an affirmation vote by the individual, fellow and emeritus members of ACCE. Those receiving at least 75% of the votes cast will be submitted to the ACCE Board

for ratification.

The 2019 Class of Inductees will be announced at the ACCE annual assembly/awards ceremony and via official ACCE publications and website. A summary of the Inductees' contributions along with a biography, pictures, etc. will be posted on the [ACCE website](#) so that the general public, clinical engineering professionals, and aspiring students can learn about the extraordinary contributions made by these pioneers.

Ray Zambuto
Chair, CE-HOF Nominations Review
Committee
CE-HOF@accenet.org

Clinical Engineering Hall of Fame, 2015-2018



Joel J. Nobel, MD
2015 Inductee



Jeffrey Cooper, PhD
2015 Inductee



Malcolm Ridgway, PhD
2016 Inductee



Larry Fennigkoh, PhD
2017 Inductee



Binseng Wang, ScD
2017 Inductee



Yadin David, EdD
2018 Inductee



James Wear, PhD
2018 Inductee

The Ethics, Morals, and Merits of Mentoring

While I have come to enjoy teaching immensely, hospital-based clinical engineering remains my first professional love and passion. As such, any continuing opportunity to stay connected and serve remains not only a personally-fulfilling thing to do, it has become an ethical and moral mandate as well. One of the primary things that attracted me to academia in the first place, was and remains the belief that next to being a parent (which I haven't had the blessings to experience), teaching was the next most noble thing that I could do. Since mentoring is also a form of teaching, I am welcoming the opportunity to serve on our Mentoring committee with as many like-minded souls that we can accommo-

date.

From the professional and ethical perspective, mentoring and supporting the growth and development of our younger members as well as potential new members, is a necessary, integral part of being a professional. Many of us simply would not be where we are today without the influence of that special someone who took that special interest, paused enough to care, and helped move us along a particular path; even if it was with us kicking and screaming along the way. Such experiences – even the unpleasant ones – remain gifts that we were given. Gifts that nurtured our professional growth and development; gifts that

may have repaired a relationship or soothed the wounds of pride when we screwed up. How do we not want to share these priceless experiences with others?

Granted, you do not have to be on a mentoring committee to mentor. Just like you didn't have to join your child's grade school parent's club to be a good parent. The difference, however, is that being a part of a like-minded collective – like a committee – brings a synergy, focus, and a reinforcement to its mission. Simply, the experiences of the many may produce a larger impact for the one or the few.

(Continued on page 12)

Mentoring from the Outside-In

The effective and structured mentoring and onboarding of new employees has increasingly been associated with greater employee satisfaction and retention^{1,2}. While employers have the primary responsibility for providing such helpful and essential transitions into the workplace, professional societies such as ACCE also have a role – and responsibility – in supporting these institutional efforts; not to compete or replace, but rather to complement and reinforce. The supplemental mentoring available from seasoned professionals outside of the new employee's employer offers a synergy, added value, and win-win arrangement for all involved. First and foremost, the new employee is made to feel especially welcomed and special. In addition, the effective onboarding experience also provides the newbie with a safety net of sorts and perhaps some additional comfort in knowing that the organization and one or more mentors' cares and has their backs.

If your organization has a formal onboarding process, please let us know if it has provisions and/or would welcome working with mentors from outside the organization. Such an arrangement could be particularly beneficial if the organization is relatively small and may not have anyone with the technical expertise available through our ACCE membership.

ACCE's current Mentoring Committee - which includes Bokang Motlotle, Frank Painter, Arleen Thukral, and me welcome your suggestions and - especially – any mentee referrals. We will then seek to match these prospective mentees with an available mentor. We will also keep you informed along the way.

Larry Fennigkoh, PhD, CCE, FAIMBE, FACCE
Mentoring Committee Chair
mentoring.chair@accenet.org
(414) 277-7289

1. <https://www.hrcloud.com/blog/the-mentoring-connection/> (accessed 11/24/18).

2. <http://www.insala.com/Articles/measuring-the-success-of-your-mentoring-program.asp> (accessed 11/24/18).



The Ethics, Morals, and Merits of Mentoring (Continued)

(Continued from page 11)

In advance of more details and structure of our Mentoring Committee to come, please give some thought and vision on the gifts of experience that you would be willing and able to share with others and how best to do so. Mentoring, and maybe not unlike being a parent, is not something that is put on and removed like a pair of jeans; rather, it is something that we just do . . . now by professional default.

All thoughts and ideas on how to advance our mentoring initiative are most welcomed. So, send them along!!

Larry Fennigkoh, PhD, CCE, FACCE, FAIMBE
Mentoring Committee Chair
mentoring.chair@accenet.org

[Mentee Inquiry Form](#)

[Mentor Volunteering Form](#)

World Health Organization (WHO) Collaborating Center for Health Technology Management Update

The Technical Services Partnership (TSP) at the University of Vermont (UVM) collaborating center has been very active globally over recent months in support of Pan American Health Organization (PAHO) in the Americas and WHO internationally. Some of the work includes:

- [Strengthening of the Regulatory Capacity of Medical Devices in the Americas](#): San Salvador, El Salvador—At the October PAHO annual meeting of regulatory authorities from the Americas, the collaborating center participated in presentations, panel discussions and networking centered on Post Market Surveillance and Medical Device Cybersecurity. The twenty countries in attendance were appreciative of the clinical

engineering actions and perspectives related to regulatory activities.

- [Peruvian Ministry of Health \(MoH\)](#): Lima, Peru—In October, Dr. Julio Medina Verástegui, Directorate General of Operations in Health, represented MoH in arranging HTM presentations, tours and meeting with health leaders at Arzobispo Loayza, María Auxiliadora, and Dos de Mayo national hospitals. Additional meetings and presentations were made for the Peruvian College of Physicians and Continental University School of Medicine. Peru has pockets of excellence in HTM and is working to develop a system throughout the MoH. The

(Continued on page 13)

World Health Organization (WHO) Update (Continued)

(Continued from page 12)

work in Peru involved significant contributions from Rossana Rivas, who is a key collaborator at the center.

- **International Clinical Engineering Intern**—Arione Rojas from the Biomedical Engineering Technology program at University of the West Indies, Trinidad & Tobago campus, began her internship in October. Arione is the 43rd international student to participate in an internship in our department. TSP also currently has three interns from the UVM biomedical engineering program.
- **IEEE INTERCON Conference:** Lima, Peru—In August, presentations were made focusing on the health technology life cycle in the IEEE Engineering in Medicine & Biology (EMBS) tract. Also, consultation was provided regarding the undergraduate clinical engineering specialization and ABET requirements for biomedical engineering at the Pontificia Universidad Catolica del Peru (PUCP)/Universidad Peruana Cayetano Heredia (UPCH) Joint BME program.

In the future, the collaborating center will be participating in workshops, sessions and hosting an exhibit at the [WHO Fourth Global Forum on Medical Devices](#) in Visakhapatnam, India, December 13-15, 2018. Over 1,000 global health technology leaders have registered for the event led by ACCE member Adriana Velasquez.

In January, Alvaro Ortega, 5th year biomedical engineering student from EIA University in Medellin, Colombia will begin his six-month internship. Lastly, we are excited to add Robert Painter, December UCONN MSBME/CE program graduate, as a clinical engineer in our department. Robert, who will start work in February, recently returned from a volunteer mission in Nigeria where he worked with Project Cure.

Tobey Clark (tobey.clark@uvm.edu)
Michael Lane (Michael.lane@uvm.edu)
WHO Collaborating Center for HTM
University of Vermont



Left to right: Dr. Juan Machicado, Loayza Hospital Director, Rossana Rivas; Dr. Julio Medina, MoH Health Services Director; Tobey Clark; and Dr. Juan Velasco, Continental University School of Medicine.

Exciting Future for Clinical Engineering in Mexico

I was honored by an invitation from the Mexican Society of Biomedical Engineering (SOMIB) to deliver a presentation at its 41st [National Congress of Biomedical Engineering](#) held from October 18-20, 2018 in León, Guanajuato province. This was a particularly significant achievement for SOMIB as it celebrated its 40th anniversary this year. The opening ceremony was

led by SOMIB's president Herbert Bravo with representatives from several international organizations such as IFMBE (Shankar Krishnan, president, and Ratko Magjarevic, vice-president), Latin American Regional Council of Biomedical Engineering – CORAL (Eric Laciari, CORAL president, and Rubén Acevedo from Argentina, president, Sérgio Muhlen and Renato Garcia from Brazil, Martha Zequera from Colombia, Luis Barriere from El Salvador, and Luis Kun from Uruguay), and ACCE (Binseng Wang).

In addition to the presentations, exhibits were provided by medical equipment manufacturers, distributors, and service companies. I was impressed by the large number of independent service vendors present, signaling a healthy and competitive business environment.

The conference was attended by over 2,500 participants, of which around 75% were undergraduate and graduate students. Particularly remarkable was the large proportion of females, a phenomenon seldom seen in the US and many other countries. These young attendees were enthusiastic and certainly not shy about asking questions and seeking advice from the speakers and more experienced professionals. It is clear that they will soon make Mexico a strong leader in biomedical and clinical engineering in the world.

While clinical engineering (CE) was only a component of the conference, it had its own track and several high-level presentations. Among them, the most memorable ones were the historical review by Mexican CE pioneer Teófila Cadena, current challenges by Silvia Rodriguez, and future

(Continued on page 14)



Ribbon cutting ceremony at the opening of the Exhibit Hall. From left to right: Luis Barriere, Rubén Acevedo, Ratko Magjarevic, Herbert Bravo, Eric Laciari, Binseng Wang and Sérgio Muhlen.

Exciting Future for Clinical Engineering in Mexico (Continued)

(Continued from page 13)

plans by Fabíola Martínez. To help celebrate the Global CE Day, SOMIB scheduled most of the CE presentations on October 20th. It was a very exciting celebra-



Picture of all speakers and attendees at the 41th National Congress of Biomedical Engineering (CNIB18) with the volunteers wearing red shirts in the front.

tion led by Fabíola Martínez. I had the privilege of presenting a lecture on Evidence-Based Maintenance at this occasion. Although he did not make any presentations, Roberto Ayala from CENETEC was a very significant participant in the conference.

Side conversations with Mexican CE professionals convinced me that the field is evolving well there particularly in smaller, private hospitals where the executive leadership is well aware of the importance of good equipment management and maintenance. While the leading public hospitals and research institutes have been well supported by CE professionals, the rest of public institutions are still lacking qualified personnel and leadership support. However, it is hopeful that this situation will improve significantly when the newly elect-

ed president takes office near the end of this year.

Binseng Wang, PhD, FACCE, FAIMBE
Chair, International Committee
International.chair@accenet.org



I had the privilege of presenting Evidence-Based Maintenance at the CNIB18.



JOIN American College of Clinical Engineering
AT HIMSS19

Member discount available!



ACCE is an official Collaborator of HIMSS19

[As such, ACCE Members receive the members discount to attend!](#) To receive the \$200 discount, go to [Register Now](#). Select American College of Clinical Engineering from the "Conference Collaborating Organizations" drop down in the registration process, and enter the code "COLLABH19"

Attend these can't miss events at HIMSS19

ACCE CE-IT Symposium: [Safe and Effective Application of Networked Medical Systems](#)

Date: Monday, February 11, 2019, 9:00 AM – 4:30 PM

Location: Hyatt Regency Orlando, Bayhill 23/24

Description: The American College of Clinical Engineering was formed to establish standards of competence and to promote excellence in clinical engineering practice, and to promote safe and effective application of science and technology in patient care.

Today, safe and effective application of science and technology has transformed into (among other things) ensuring that medical equipment can integrate and network safely in the hospital network, and can be protected by outside attackers.

In this Symposium we will have nationally and internationally recognized speakers and engineers who will address this shift in clinical engineering practice. We will cover topics such as medical device security, patching of medical equipment, disaster recovery planning, safe networking of medical equipment and systems, long term capital planning, and emerging technologies and their impact on the hospital operations.

Complimentary! Pre-registration required. [To register, click here](#)

For detailed program & speakers, [click here](#)

Sponsored by:

ASIMILY

CloudPost

nuvolo

Zingbox

ACCE Events at HIMSS19

ACCE Education Session #149: Presenting the Case of Cybersecurity Education of Clinicians

Time: Wednesday, February 13, 2019. 1:00 – 2pm

Location: Orlando Convention Center, Room: W311A

Description: Cybersecurity has long been looked at as an IT or IT Security problem with little concern to anybody else. But as we are witnessing care-interrupting cyberattacks impacting increasingly interconnected and technology-dependent health delivery systems, we need to take a broader approach and include non-technical stakeholders, especially clinicians. This requires that we find ways to establish the security roles and responsibilities for these clinical cyber security leaders and that their security educational needs are met so that they can be partners in security planning and decision-making.

Although roles and consequently security responsibilities vary, all participants need to understand how their daily decisions impact an organization's security risks and exposure. A broad range of new responsibilities is evolving, starting with the need to include cybersecurity during equipment purchasing and replacement planning, considering security in the context of clinician workflows, and the need for technical / clinical tradeoff decisions in case of a cyber-incident affecting clinical systems. Further, clinicians may be approached by patients with questions relating to their devices' cyber risks, and consequently need to understand how these cyber-concerns could impact patients' trust and treatment decisions.

Today's security risks are too complex and the risk to care delivery and patient safety is too high for cybersecurity to be relegated to the purely technical realm. Cybersecurity programs can only succeed if based on a holistic approach that involves a constructive partnership between stakeholders. This session will explore how organizations can improve cybersecurity when decisions are made as a partnership between security-educated clinicians and security professionals that balances patient and societal needs for health, safety AND security.

Speakers: **Axel Wirth**, Distinguished Technical Architect, Symantec Corporation
Dr. Joseph Schneider, Clinical Assistant Professor, UT Southwestern Medical Center

ACCE Education Session #238: A Practical Approach to Medical Technology Capital Planning

Date/Time: Thursday, February 14, 2019; 11:30am-12:30pm

Location: Orlando Convention Center, Room: W315A

Description: Most healthcare organizations usually have a set capital budget for medical technology acquisitions. In this day and age, technology has become increasingly complex, devices are interfacing with each other as well as Electronic Medical Records; and CyberSecurity has taken a front and center seat on medical equipment and systems decisions. As such, it has become very difficult to make the right decisions on when to retire medical equipment, when to purchase new equipment, and what technology to use in order to replace outdated/end of life medical systems and devices.

In this session, we will explore how three different leading healthcare organizations have coped with these issues, different strategies used to address them, and lessons learned during this process.

Speakers: **Iilir Kullolli**, Director of Clinical Technology and Biomedical Engineering at Stanford Children's Health.
Kevin Kreitzman, Assistant. Director, Clinical Engineering, Brigham and Women's Hospital.

Health Technology Alliance & American College of Clinical Engineering Awards Reception

Date/Time: Tuesday, February 12, 2019; 6:00 PM– 8:00 PM EST

Location: Orange County Convention Center/ Room# W240C, level 2

Description: Network with ACCE members, experts from Clinical Engineering, Health Technology Management, and Medical Device Domain - all are welcome to attend!

Join Arif Subhan, President/ACCE and Steven Wretling, CTIO/HIMSS in congratulating the 2019 ACCE/HIMSS Excellence in Clinical Engineering and Information Technology Synergies Award recipient

Sponsored by



[Click Here to RSVP Today](#)

[Click here for HIMSS19 Schedule at a glance](#)
[Click here to REGISTER for HIMSS19 Conference](#)
[Book your hotel today](#)

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

Jim Keller, Ted Cohen, Jared Ruckman, Suly Chi

The ACCE News Editorial and Circulation Team

ACCE Calendar

January 10, 2019

Webinar: Staffing Models & Justification to Management

[More info](#)

January 21-25, 2019

IHE NA Connectathon 2019

Cleveland, OH

[More Info](#)

January 25, 2019

Last day to submit comments regarding the FDA white paper and the workshop

[Instructions for Submitting Comments](#)

January 27, 2019

Last day to enter 2019 Student Paper Competition

[Entry Form](#)

February 11, 2019

ACCE CE-IT Symposium, pre-HIMSS19

Hyatt Regency, Orlando, FL

[More Info](#)

February 11-15, 2019

HIMSS19 Conference & Exhibition

Orange County Convention Center, Orlando, FL

[More Info](#)

February 10, 2019

Last day to submit nominations for the 2019 CE Hall of Fame candidates

[More Info](#)

February 12, 2019

HTA/ACCE Awards reception

Orange County Convention Center, Orlando, FL

February 14, 2019

Webinar: The Joint Commission 2019 Update, by Ken Monroe

[More Info](#)

February 25-26, 2019

Medical Device & IoT Summit Boston, MA

[More Info](#)



ACCE

AMERICAN COLLEGE OF CLINICAL ENGINEERING

The ACCE Board and Committee Chairs

President.....	Arif Subhan
President Elect.....	Ilir Kullolli
Vice President.....	Pratyusha Pedaprolu
Secretary.....	Priyanka Upendra
Treasurer.....	James Panella
Member-at-Large.....	David Braeutigam
Member-at-Large.....	Jim Caporali
Member-at-Large.....	Kim Greenwood
Member-at-Large.....	Samantha Jacques
Immediate Past President.....	Petr Kresta
Education Co-Chairs.....	Austin Hampton, Danielle Cowgill
Membership Committee Chair.....	Jim Caporali
Advocacy Committee Chair.....	Clarice Holden
CE-IT Committee Chair.....	Stephen Grimes
CE-HOF Nominations Review Committee.....	Ray Zambuto
International Committee Chair.....	Binseng Wang
Mentoring Committee Chair.....	Larry Fennigkoh
Nominations Committee Chair.....	Petr Kresta
Body of Knowledge Committee Chair.....	Katherine Navarro
Secretariat.....	Suly Chi