



# The ACCE Healthcare Technology Foundation— Creating a Model for the Clinical Engineering Profession

William Hyman Interviews Yadin David

Editor, *Journal of Clinical Engineering*, and Department of Biomedical  
Engineering, Texas A&M University, College Station (Mr Hyman);

President, ACCE Healthcare Foundation, and Department of Biomedical Engineering,  
Texas Children's Hospital, Houston (Mr David).

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*Dr David, why did you organize the ACCE Healthcare  
Technology Foundation (AHTF)?*

We came up with the Foundation because, fundamentally, we all stand to learn from one another. While clinical engineering (CE) has been around for a long time, we are lagging in terms of institution building and, specifically, identifying benchmarking best practices. So, the idea was, let's come up with a model of core values for a CE program and create the most comprehensive repository of the best benchmarks, the best ideas, and the best examples. Then let's use them as teaching tools—and let's educate the next generation, but let's also educate industry, regulatory, and the public.

All I really had to do to achieve these goals was to reach out to the CE All-Stars and Future All-Stars in our line of practice and put them in a collaborative environment. I expected that I'd get some eyeballs rolling about having one more entity, but each one of them—without exception—got the point of it immediately. The response has been overwhelming from the start, in no small part, I believe, because the CE profession has matured to the point that it needs a private nonprofit foundation to help build an evolving legacy for the unknown challenges that CEs will face in the future.

*You were also instrumental in the organization  
of the American College of Clinical Engineering itself,  
and there are other organizations that include clinical  
engineering interests. Why was a new organization needed?*

Truth be told, we could probably start another half-dozen or so groups and we still couldn't hold a candle to the number of professional societies, foundation, and chapters your typical clinician, architect, or salesperson are involved in. And we, as CEs, need to be as rigorous about our mission as we are about the nuts and bolts of our work.

Specifically as to your question, the Foundation's mission is unique. The ACCE is our Congress, if you like; the Foundation is our Library of Congress. It is the place you go to

share ideas, fund projects, discuss different approaches, and share intelligence from the field. Thus, it becomes the definitive record of our profession.

The AHTF does not have a membership, and it is driven by vision rather than membership interests. It is not dependent on nor does it consume dues money. As a small organization, the AHTF can be more responsive to special issues, for example, the extension of clinical engineering knowledge to the public and helping people at home to cope with safety and efficiency issues associated with healthcare technology outside the clinical environment. Finally, the AHTF has a tax exempt status and thus presents a unique opportunity for fund raising and charitable gifts.

These distinctions do not mean that the AHTF intends to have a wholly different agenda from that of the ACCE. We expect our activities to be complimentary to those of the ACCE, but with a different methodology and a more global perspective.

*What is the relationship between the AHTF, ACCE,  
the Healthcare Technology Certification Commission, and  
the US Board of Examiners for Clinical Engineering  
Certification?*

Although by name we are closely linked to ACCE, as an organization, we are independent, having to generate our own funds, having our own budget, bylaws, and executive board. However, we have common overall goals, and the President of ACCE has a permanent seat on the board of the AHTF. In particular, most if not all of the AHTF board members are ACCE members, and we have ongoing discussions with ACCE to determine who should do what in specific areas. There is an exciting synergy, and the collaboration is mutually beneficial and growing.

The Healthcare Technology Certification Commission is also an independent organization, and the US Board reports to this Commission. The AHTF currently has made a financial commitment to support the clinical engineering certification program, so there is a funding link that advances the overall

commitment of ACCE to establish this professional development program where the independent certification body is an integral part.

*What about AAMI, or other membership professional organizations, any links?*

No, the AHTF is completely independent from AAMI, IEEE/EMBS, and any other organization. We do, of course, cooperate whenever appropriate and possible. For example, there was a session devoted to one of our projects, clinical alarms management, at the 2004 AAMI meeting in Tampa. An important survey instrument as part of this project can be found at the address below. Readers are encouraged to fill out the survey and to have their nursing staff fill it out also:

<http://www.surveymonkey.com/s.asp?u=339221233056>.

*The AHTF has assembled an impressive volunteer board of well-known clinical engineering professionals. Tell us about them.*

The Foundation is not a membership-based organization, and as such, it is as good as its Board of Directors. It is my honor to be included in such a professional and dedicated group. Each and every one of them personally contributes not only time but also money to the Foundation. Though among the people we work with are the best and brightest in the profession, the Foundation is not a museum, and membership begets responsibilities. I am proud to say that we get 100% financial participation from our Board members

The Board consists of:

- Wayne Morse, MSBME, CCE—Vice President
- Jennifer Ott, MSBME, CCE—Secretary
- Ira Tackle, MEng—Treasurer
- Frank Painter, MEng, CCE—Professional Credentials committee
- Marvin Shepherd, PE, FACCE—Professional Practices and Education committee
- Elliot Sloane, PhD—Budget and Fiscal Review committee
- J. Tobey Clark, MSEE, CCE—Clinical Alarms Management
- Matthew Baretich, PE, PhD, CCE, CHFM—Clinical Engineering Excellence
- Bryanne Patel, BS, MIS, FACCE—Board member
- Ode Keil, MS, MBA, CCE—Board member
- Izabella Gieras—ACCE President, Board member

It is noteworthy that all of these individuals are easily recognized for their long-running and/or dynamic young leadership in the various areas of clinical engineering.

We currently have several vacancies, and our Nominations Committee is in the process of accepting and reviewing candidates for Board membership.

*How are you organized? When do you meet as a group?*

We must be very efficient with our overhead as we desire to invest our resources in projects and not administration. The Board meets on a monthly basis via conference call. In between, the committees and task

forces do the same on their own schedule. In addition, the Executive Board meets monthly to provide the needed oversight. We hold an annual meeting in Houston, Texas. The last one was held in April 2005, and it was very productive, especially having you there as a facilitator.

*Where does the AHTF get its funds?*

Our funds are coming from the medical device and service industries, hospitals, individual ACCE members, board members, and workshop fees.

*Sometime, it can be relatively easy to attract an initial level of contributions based in part on personal relationships, but will the AHTF be able to sustain the initial momentum?*

It is never easy to raise money. Hardly anyone likes to ask for money, and fewer still like to give it. But our cause is right, and the profession is ripe for precisely this kind of institution building. Our initial momentum is robust, and it is informed. Our boosters know that it is a continuing labor of love, and we will not be shy to ask for support, whether it to be in kind or financial. We plan to grow in a responsible way, and we are taking steps to take into account the growing pains before they happen. The Foundation is here to stay.

*Why have the participating medical device companies that have contributed to the AHTF bought into the concept?*

The first reason is because they felt that our initiatives promote quality in healthcare delivery in general and to their own philosophy in particular. In addition, they recognize the strong commitment from members of the Board who have individually proven track records of professional accomplishments and they knew that their support will provide maximum benefit. We offer a unique strategy to facilitate the various driving forces that impact on the direction of clinical engineering. From technology innovation, to service and management of the technology lifecycle, this Foundation constructs useful collaborations by having similar core values and interest in the promotion of the optimal use of healthcare technology by professionals as well as by the public.

At the end of the day, the medical device companies stand to learn a great deal about the healthcare environment from us. And we stand to impact the development of devices by engaging them in dialogue from the word go. It's a win-win for everyone, including the most important participant, ultimately—the patient.

*We all understand financial constraints, but if funding were not a major issue, what would be the grand vision of the role of the AHTF?*

Financial constraints notwithstanding, rest assured, we are pursuing a grand vision, not just for the Foundation but for the CE profession, and not just domestically either. We are not for want of ambition. But our ability to raise money not only powers our initiatives, it also serves as a proxy for us to gauge the interest level of our colleagues.

If we build it, will they come? At this point, I can tell you the answer is a definitive yes. So, if we are able to gear up our funding, we will be in a position to realize our goals more quickly.

Those of us familiar with the Whitaker Foundation can see a role for the AHTF to be the "Whitaker Foundation" of clinical engineering. The Whitaker Foundation had substantial resources. In fact, the Whitaker Foundation never needed to raise money, and at times during its tenure, it had to spend money more quickly. It devoted itself to biomedical engineering education, including funding the development of many new academic departments and young investigator research. It also supported a number of related endeavors, including conferences and other special projects. In many ways, it became the "go-to" resource for biomedical engineering and it was able to meet many creditable requests.

If the AHTF was funded at that level, it could likewise be the "go-to" resource for advancing clinical engineering across a broad spectrum of public and professional issues. It would be able to consider and support outside requests for funding in addition to, or perhaps instead of, administering projects itself. It could also be proactive, soliciting proposals for predefined activities of wide-reaching importance, and it could support a professional in-house and consulting staff to move projects from volunteer to paid status. This vision is exciting to us, and we hope to reach this point.

The Foundation marks an important milestone in the evolution of our profession. This is our moment to anchor the flag on the shore and help articulate the profession's core principles.

*What special projects does the AHTF have underway, and who is leading them?*

Certification in Clinical Engineering led by Frank Painter, who has worked on this idea for many years. Clinical Alarms Management led by Tobey Clark, who works with many organizations, including AACN, AAMI, MedSun, and others defining the issues and developing great survey tools. The results of this effort will be used to educate industry, users, and regulator about alarms issues. Patient Safety and Education led by Mary Shepherd, who created beautiful public education materials promoting safe use of medical technology at home, and Matt Barerich, who leads the new initiative of creating clinical engineering program excellence indicators.

*Do any of these projects have dedicated support from contributors?*

The clinical alarms project has earmarked support from General Electric because this issue is so integral to many of their products. Medtronic/Physio-Controls is interested in the clinical engineering excellence program, and other donors elected to contribute in a more general way.

*Do these projects have an end point, or are they going to be ongoing?*

We are action and results oriented. This is not Toastmasters. We are into doing way more about these important issues than just talking.

All projects have at least significant milestones where there will be measurable and useful results. However, almost all projects have self-defined limitations to their scope and could therefore be extended or expanded. At the appropriate intervals, we will review project accomplishments and make decisions on where to go from that point. In addition, we will be thinking about new projects, prioritizing them, and seeking funding for them.

*The clinical alarms project is addressing an issue that has always been of great interest and concern to clinical engineer, including the on-again, off-again JCAHO National Patient Safety Goal. Are problems with alarms getting better or getting worse?*

That is an interesting question. Ideally, we should be able to improve problems through technology, but I don't think we are there yet. In fact, this challenge is the motivation for the AHTF's alarm management project.

The volume and type of alarms is certainly increasing, challenging the clinical staff to understand them and be responsive. And the problem is not just multiple devices being used simultaneously. A contributor to BICOMEDTALK recently determined that their bedside monitor had 400 different alarm states! One solution being investigated is the centralization of alarms with a human monitor, then advising clinical staff. To be practical, this concept requires alarm management software. Thus, the solution to the current alarms situation is probably involved with the integration of additional technology and additional complexity. These both raise issues of development and design strategy, cost, and reliability. One missing element is the need for cooperation among the different device manufacturers so that alarm sounds and communication protocols are standardized and can be systematically evaluated.

*I understand that the alarms project has a strong group of contributors, including both AHTF Board members and others. Please list them for us.*

As noted above, Toby Clark leads this effort, with the active participation by AHTF Board members Wayne Morse, Jennifer Ott, Frank Painter, Marvin Shepherd, Matthew Baretich, Bryanne Pate, Ode Keil, Izabella Gieras, Tom Bauld, and me. Also helping are Steve Grimes, Theodore Cohen, Thomas Bald, Paul Frisch, Saul Miodownik, and of course you, William Hyman.

*Turning to clinical engineering certification, will the certification process always require funding by an outside source, or can it become self-sustaining? Or more to the immediate point, will this be ongoing commitment of the AHTF?*

In order to make sense, a certification program must be self-sustaining. It is interesting that the current expenses of the program are only for direct expenses and the costs of the professional testing company. Not only are the US

Board members volunteers, but they are covering their own travel expenses. Growth of the certification program is the key to its future finances since the income increases linearly with the number of CCEs but the expense curve is much flatter. The AHTE's commitment is to the startup period, subject to periodic review.

*What is the AHTE web address, and what is found there?*

<http://www.acee-htf.org>

The Web site has information about the current Foundation initiatives, opportunities to contribute, and information for volunteers to join our effort. I encourage readers to visit the site and become supporters of the Foundation. We want and need their help and support.

*Any final thoughts?*

I will let you in on a secret. I recently got my full membership card for the AARP. I flash my card. I get

discounts. I can go to the website and learn more about how great it is to be older. I have a team of lobbyists working in DC on my behalf. We should celebrate our profession with the same kind of passion. What better way to commemorate CE than to build something that charts where we are and where we are going. Let's get everybody on board, lay out some directions, and move confidently in pursuit of those goals.

If you're reading this interview, you know we are an important part of the healthcare delivery value chain. Why should our value added be any different than the person in the R&D lab contemplating a new device, or our bedside colleagues handling the stethoscope? Let's promote professional excellence, develop technology-related guidance of care, discuss ethical issues, and lead in bringing device safety concepts to the general public. The Foundation can be our conduit to building a better future for CE.



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