

ACCE News

Vol. 9, No. 2 – March 1999



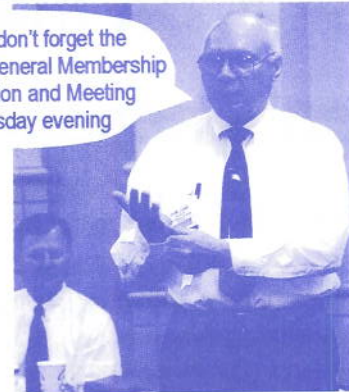
ACCE's John Hughes welcomes all to AAMI 99

John is co-chair of this year's AAMI program, June 5-9, in Boston, MA. Come to this year's meeting featuring presentations by many ACCE members. Among the long list of ACCE contributors to the AAMI program besides John are George Johnston, Bob Morris, Yadin David, Mark Bruley, Ira Tackel, Frank Painter, Tom O'Dea, Mark Brody, Caroline Campbell, Scott Segalewitz, Jim Wear, Ira Soller, Tom Bauld, Jim Keller, Paul Ostrowski, Damodar Shenoy, Elliot Sloane, Eben Kermit, Bryanne Patail, Tobey Clark, Jennifer Ott, Larry Hertzler, Manny Roman, Marvin Shepherd, Nick Noyes, Greg Davis, Dean Skillicorn, Brian Porras, Jay Hall, Alan Lipschultz, Manny Furst

ACCE President Morris Gives Course at AAM'

Bob Morris joined by Past President Frank Painter will give the course *Introduction to Laboratory Equipment Maintenance*, at this year's AAMI Meeting. Bob and Frank will explain photometry and immunological measurement and teach the basic principles of the Coulter Counter, the Abbott TDx, Hitachi 747, and the Beckman CX. The two-day course reviews principles of measurements, troubleshooting, repair, preventive maintenance, capital acquisition, specialty certification, and laboratory safety.

And don't forget the ACCE General Membership Reception and Meeting Tuesday evening



A First for a Founding Father

ACCE's Yadin David broadcasts live from a telemedicine conference in Jerusalem, Israel, for a stimulating presentation. See and hear this unique interactive session. Learn from experts in the new applications of medical simulation and telemedicine. June 7, 8:00-10:00 am, AAMI Meeting, Boston, MA, Hynes Convention Center



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American College of Clinical Engineering

ACCE News

ACCE Mission

1. To establish a standard of competence and to promote excellence in Clinical Engineering Practice.
2. To promote safe and effective application of Science and Technology to patient care.
3. To define the body of knowledge on which the profession is based.
4. To represent the professional interests of Clinical Engineers.

ACCE on the Web

[http:// accenet.org](http://accenet.org)

President's Message

Robert L. Morris, PE, CCE, morris@ohsu.edu

The following is a copy of a letter I have sent to the Editors of 24X7 magazine.

To the Editor:

In the April 1999 issue of 24X7 magazine there is a petition to establish a "Biomed Week". I find this a most interesting document. The petition apparently originated from a BMET named Robert Broussard from Houston, Texas.

While I appreciate Mr. Broussard's efforts to get the Federal Government to honor engineers, I find it curious that there is no mention of BMETs in the petition. After all, if we are talking about maintaining and supporting medical equipment there are many more BMETs working in hospitals than engineers.

The altruism of Mr. Broussard is striking. It is not often that a member of a majority goes out of their way to ensure honor to a minority without even including a reference to the majority.

There are significant differences between engineers and BMETs. They have different knowledge and education bases. There are different professional societies. There are separate certifying bodies. The accepted, published, formal definitions of the two groups are different. Tests and requirements for certification are different. I spent 12 years as a member of the Certification Board for Clinical Engineering and have proctored many BMET examinations. Many

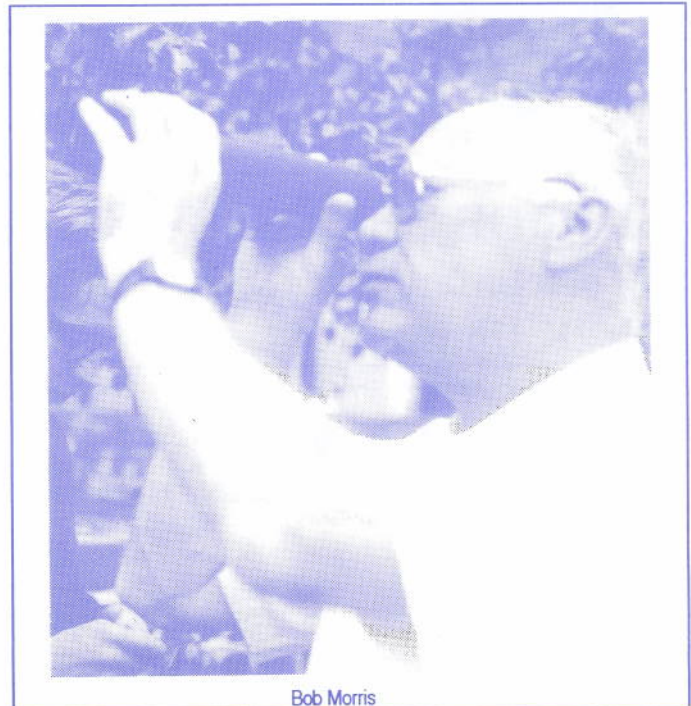
engineers could not pass the BMET certification examination. The reverse is also true.

In general, engineers and BMETs serve different functions in the hospital. BMETs spend most of their time hands on performing corrective and scheduled maintenance functions. Their daily focus is equipment oriented. They are rarely required to perform Present or Future Value calculations or to prepare detailed departmental budgets. Most engineers working in hospitals spend the majority of their time doing analysis and technology management. They seldom provide direct, hands on maintenance. Of course there is overlap but such overlap is becoming less and less common. One independent illustration of the difference in function is illustrated by the fact that hospitals have differing salary scales for the two groups. Neither group is "better" than the other. The best support of medical equipment in hospitals occurs where there is an atmosphere of mutual respect and understanding between the two groups.

BMETs are a crucial and respected element in the total health care equipment maintenance system. They are the people who do most of the hands on repair in hospitals. BMETs have played a significant role in my professional development. BMETs should not be slighted by exclusion from any petition to establish a "Biomed Week" to honor those who support the equipment in hospitals. Any such petition should specifically include the names of those occupations to be recognized.

Robert L. Morris, PE, CCE

President, American College of Clinical Engineering



Bob Morris

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

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WHAT'S AN ENGINEER? REVISITED!

George I. Johnston, johnstog@oshu.edu

Another National Engineer's Week has passed and again the public has little more knowledge than before about engineers, what they do and how much they contribute to and benefit society. Thanks to Hollywood, TV, and the writings of, by, and about the other professions, parents encourage their children to pursue careers in law, medicine, and science, but rarely, engineering. Despite the fact that many students are acutely aware of the difficulty of an engineering education, many refer to engineering as pre business and public administration, i.e. curricula in which the engineering dropouts re-enroll. Often those business graduates later command the large salaries and hire engineers for considerably less.

The earliest known contrivance operated by steam-power was the Sphere of Aeolus or aeolipile devised by Hero in the first century AD¹. Experience in harnessing wind and waterpower to advance the activities of man evolved out of scientific observations and experimental devices concocted by pioneers like Savery, Newcomen and Smeaton^{1,2}. The industrial revolution, however, with its "power driven machinery," is generally noted as beginning around 1750 wherein James Watt, a practicing civil engineer, advanced these earlier crude steam engines, developments of engineers like Smeaton and Newcomen. In 1769, Watt was granted a "historic patent for *A new Method of Lessening the Consumption of Steam and Fuel in Fire Engines.*"¹ At this point industry was freed from the constraint of locating by streams and rivers for its energy source. In the following century the engineering development of small electric motors similarly freed manufacturing from the central locations of large electric motors driving overhead power shafts.

As scientific discoveries in mechanics, chemistry and electricity evolved, engineers and architects developed products based upon these discoveries. By the late 18th century engineering societies recognizing military and civil engineering, as distinguished from architecture, were being formed as were schools of engineering, further distinguishing science from engineering. Industrial and commercial demand for new and ingenious products to satisfy social and capitalistic needs had created an ever-expanding engineering population and educational base.

Recognition of the engineer's contribution to society has not been commensurate with his accomplishments. Even engineers who become famous for other roles in society go unrecognized for their engineering training and activities. How many are aware that the father of our country, George Washington, was first a military engineer and land surveyor sent by Virginia Governor Dinwiddie to the West on several engagements with the French and Indians in the Ohio Valley³.

I cite these examples as an unfortunate consequence of our profession. These engineering contributions to the advancement of technology and the welfare of society have been spurred on mostly by quest for commercialization and profit. Most engineers do not write like lawyers, publish like scientists and physicians, or lobby like businessmen. As a consequence they have gained neither social nor political clout. Registration requirements are only for those engineers practicing in the public domain and for purposes of

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Letters

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The Editor encourages readers to express their views by way of letters that might be printed here for the benefit of the readership. He also likes to get mail.

See a special request for assistance on page 13

ACCE Educational Program 1999 Audio-Teleconferences

Clinical Engineering for the Millennium

Founded in 1991, the American College of Clinical Engineering (ACCE) is committed to enhancing the profession of clinical engineering. With members in the United States and abroad, the ACCE is the only professional society for clinical engineers.

For 1999, ACCE will offer an exciting educational program at a low cost. By participating in an audio-teleconference, you will be able to obtain up-to-date materials without incurring any travel expense or time away from the office. There will be a 1-hour class once a month and a different topic will be covered each class.

Recognized experts in the field are selected to make up the faculty and the topics are the ones requested by our members. In a class the lecture will last for 45 minutes followed by a 15-minute question and answer period.

Classes will be conducted on the third Thursday of each month at 12:00 noon, EST. Continuing education units will be issued by the University of Arkansas for Medical Sciences. For participating in the audio-teleconference you are required to use a phone with a mute button.

The ACCE audio-teleconference is an opportunity to get the clinical/biomedical engineering people in your area together. The teleconference can be a way to start a discussion with your colleagues. The cost can be shared by different institutions paying for each course or they can pool their funds for the series. A larger site might sponsor the course and charge single attendees from other sites.

Course Fees

Each course fee and the series fee are as follows. Four attendees are included in the base cost of each site.

Per course	\$125
Series of 7	\$875
Additional attendees	\$10

The course fee includes phone charges, master copy of handout materials and CEU certificates.

Payment

Make course registration check payable to **American College of Clinical Engineering**.

Purchase orders and credit cards will also be accepted. VISA and MasterCard will be accepted by providing the account name, account number and expiration date.

Mail Registration to ACCE Course Registration or FAX to 501-771-1775
5104 Randolph Road
North Little Rock, AR 72116

Information: Call James O. Wear at 501-257-4175

Clinical Engineering for the Millennium

June 17, 1999

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Y2K Contingency Planning

July 15, 1999

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An Integrated Approach to Managing Technology

August 19, 1999

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Clinical Engineer
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Development of a Customer-Focused Clinical Engineering Team

September 16, 1999

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Director Clinical Engineering
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Electromagnetic Interference

October 21, 1999

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Telemedicine

November 18, 1999

John D. Hughes, MS
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**Critical Skills for the Successful Practice of
Clinical Engineering and Technology Management**

December 16, 1999

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JCAHO Update

AHA's MEDICAL TELEMETRY TASK FORCE SUBMITS FINAL RECOMMENDATIONS TO FCC

In consultation with the Federal Communications Commission (FCC) and the Food and Drug Administration (FDA), the American Hospital Association (AHA) established a Medical Telemetry Task Force to gather more information on the present and future requirements of medical telemetry equipment as it relates to spectrum allocation and patient safety. The Medical Telemetry Task Force is comprised of members of the clinical engineering community, telemetry manufacturers including Hewlett Packard, Marquette, VitalCom, and Spacelabs, National Association of Broadcasters, and representatives of AHA and American Society of Healthcare Engineering (ASHE), and liaisons from the FDA and the FCC. The Task Force has finalized and forwarded its conclusions to the FCC recommending dedicated spectrum for medical telemetry equipment. Four areas of need were identified by the Task Force and working groups were formed to address each area of need. The outcomes of these working groups were as follows:

Definition: A series of information was solicited from representatives from the user community, manufacturers of wireless medical telemetry equipment, members of the Task Force, regulatory groups, and from professional societies to develop the following definition of medical telemetry.

Medical telemetry is defined as a measurement of something at a distance. Wireless medical telemetry is therefore defined as the measurement and recording of physiological parameters and other patient-related information via radiated bi- and unidirectional electromagnetic signals. This technology may be contained within a healthcare facility or extend beyond to other buildings and locations.

Physiologic Parameters: Based on a survey of fourteen hospitals of various sizes in both metropolitan and suburban/rural areas and various professional groups, the Workgroup determined what the spectrum needs would be today if appropriate patient care and communication technology were available to the medical community. The physiologic monitoring needs were defined as follows:

CURRENT TELEMETRY MONITORING NEEDS	
Physiologic Parameter	Number of Concurrent Patients
adult electrocardiogram	200 - 600
pulse oximetry	16 - 210
obstetrical (fetal/maternal) parameters	0 - 150
invasive pressures	17 - 420
respirations	4 - 210
12 sets of episodic data, e.g. noninvasive blood pressure, temperature.	up to 500 patients

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The telemetry manufacturers represented in the Workgroup determined that with the use of sophisticated communications technology and a spectral efficiency of 0.8 bits per second per Hertz, these physiologic parameters could be accommodated utilizing a bandwidth of 6.125 MHz. However, based on several market factors which indicate a significant growth in spectrum needs over the next ten years, future needs were extrapolated and the spectrum needs for the next ten years were calculated to be 12 MHz.

The manufacturer representatives in the Workgroup estimated that a 3-year period would be required following the allocation of spectrum to bring products to market. This product development will include the necessary regulatory processes applicable to medical devices. The hospital representatives estimate that a 3-year period will be required to prepare the hospitals to acquire that technology. That preparation will accommodate the budgeting cycle and installation activities related to the telemetry monitoring. These two 3 year periods are not necessarily concurrent. Therefore, a minimum transition period of three to five years is recommended.

Spectrum Selection: Fourteen spectrum candidate bands were compared based on five major technical requirements. These requirements were communications reliability, spectrum attributes, propagation characteristics, safety considerations, and product implementation considerations. Most of the candidate bands were dismissed due to their potential for inband/adjacent band interference; inadequate bandwidth, current FCC regulatory status, undesirable path loss and power requirements, or limited merchant market support for off-the-shelf RF components. After evaluating these various factors, the workgroup recommended that medical telemetry should seek “co-primary” status for the 608-614 MHz band (TV37) and “primary status” for 1385-1390 MHz/1432-1435 MHz band. In addition, current medical telemetry spectrum allocations (174-216 MHz/460-470 MHz/470-668 MHz) should continue with medical telemetry having secondary status on these frequencies. In addition, all new spectrum allocations for medical telemetry should permit the use of flexible communications technologies, including, but not limited to, bi-directional transmissions (telecommand), spectrally efficient modulation schemes, and non-vital signs data (e.g. voice). Creation of a frequency administrator role for single point representation in spectrum allocation discussions and facilitation of industry migration to the dedicated frequency bands was also recommended.

Education: The Education Task Force has recommended and is implementing the following initiatives:

- Establishing partnerships between professional societies to share specialty information on areas that impact across the societies.
- Establishing lesson plans for healthcare institutions to assist them in the training of their employees on electromagnetic interference.
- Establishing an executive level Power Point presentation on electromagnetic interference in order to further assist their members to manage the risk.
- Investigating the possibility of establishing video as well as interactive computer education on electromagnetic interference.

At the December 17th meeting of the Medical Telemetry Task Force, three additional working groups were established. Under the leadership of Mike Dempsey, Hewlett Packard, a number of Task Force members have developed rules to be forwarded to the FCC for consideration. Under the leadership of Steven Deick, Mayo Foundation, the role of the frequency administrator is being developed.

The FCC is anticipated to discuss the medical telemetry issue in detail at a meeting this spring. Sometime shortly after this discussion, the FCC is anticipated to circulate some form of communication on medical telemetry for public comment. When available, the draft ruling can be accessed at <http://www.fcc.gov>.

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THE VIEW FROM THE PENALTY BOX *David Harrington, davesbt@kersur.net*

February 13, 1999 was a day of mixed emotions for me. This was the day that the last of the arenas that I played in as a professional had its last hockey game. The Maple Leaf Garden was opened in 1931 and for 5 years that is where I tried to make it. Trying to balance school and professional sports left me with little time to enjoy the great cities that I played in. Now over 35 years from my last game time to enjoy life seems to be even scarcer.

When the knees went and I had to find another way to support myself I tried various professions before getting into medical instrumentation. In the mid-sixties medical instrumentation was just starting to explode and it was a challenge just to be involved, also rewarding both financially and intellectually. This growth went on for years and in the early 90's it suddenly stopped. People started being down-sized out of hospitals, good engineers were suddenly out of the field and our profession started to get a "bunker mentality." Keep your head down, keep quiet and maybe you will still have a job.

As with hockey, clinical engineering seemed to reach a saturation point and started to contract into its roots. But over the past year I am starting to see signs of growth in both areas. In the past 6 months I have worked with several hospitals who are going back to inhouse programs, granted smaller and more focused than in the past. I have also worked with ISO organizations that are in such need of experienced people that engineers who have been out of the field for a few years are coming back into our profession.

I worked with one hospital getting them ready for the year 2000. I had worked with the administrator many years ago and one night over a few "milk shakes" he talked about why his hospital didn't have its own clinical engineering department. It was a financial decision made by a new CFO who believed the pitch of a sales person that the hospital could save money by contracting out its needs. While the hospital did save money over what the department would have cost them, an estimated \$17,000 over 3 years, the staff was not totally happy with the response from the contractor. The paper work was great but failure rates were inching up and costs were growing. In my report to the hospital I noted that a high percentage of its equipment was old, parts were no longer available from the vendors, and there was no evidence of any replacement plan. If they don't get a plan in place the hospital will be technically non-competitive by the year 2004. Maybe the hospital is looking for some chain to buy them, pour money into the facility, and make them competitive again. The chances of that are slim and none and Slim just left town. I look for very limited growth from the chains in the future as they lose clout with the government and can't get the tax benefits they need to keep buying failing hospitals.

For the first time in about 7 years I feel our profession is on a growth path. If Y2K has done nothing else it has brought home to hospitals that technology can best be managed in house or by local companies. In hospitals where there is good clinical engineering the amount of equipment that will have to be replaced is much smaller than in others. Collectively we have done a much better job in preventing Y2K problems and coping with them than our colleagues in information systems. Many hospitals are spending millions to correct their computer systems and only a few thousand on clinical equipment. **WE DID A GREAT JOB** and don't let the administrators forget it.

As Maple Leaf Garden closed, Meghan Elizabeth was born, our first grand daughter, hence, the mixed emotions on February 19, 1999.



Dr. William Jarzemski -- In Memoriam

George Johnston, johnstog@oshu.edu

I was saddened to learn that Bill Jarzemski had died. I used to keep in touch with him, calling a few times a year, but lost track a couple years ago when he moved. I don't recall becoming acquainted with him by any specific introduction, only a growing awareness of him starting more than twenty years ago at EMBS and AAMI meetings when he delivered what I thought were some powerful observations on engineering management accompanied by his soap box oratory on engineers becoming licensed. Our friendship grew from discussions at those meetings plus revelations that we shared many common interests including working on old cars and a penchant for gadgeteering. Both of us were handy with tools and lamented the demise of high school shop programs where we both made our first acquaintance with lathes, drill presses, table saws and the like. We observed how that changing focus had resulted in engineers lacking skills with tools, "...can't jockey a simple soldering iron anymore!" Sound familiar? That was Bill talking. I will miss him, as will his many friends. His career ended too soon for him to become an ACCE member, but he was very active in IEEE EMBS and did much to support the advancement of clinical engineering as well as professional engineering. In the process he was even able to rattle some cages in Washington in support of engineering.

Greater New York Hospital Association Meeting Y2K: Testing of Biomedical Equipment

Thomas J Bauld, BauldT@mercyhealth.com

As Premier CTS Manager working at Mercy Health Services (MHS) in Michigan and Iowa, I was invited by the Greater New York Hospital Association (GNYHA) to speak at one of their ongoing conferences on Y2K. The topic for March 18, 1999 was Testing Biomedical Devices. I discussed the strategy of addressing the High-Risk items first and testing only those items where there is No Information Available.

The other speaker, Thomas Skorup of ECRI, gave an overview of Y2K with a major emphasis on testing. While not promoting testing, he said it gave a second data value for a device. ECRI is not doing any Y2K testing either in their laboratories or in the field as consultants. ECRI will help an institution develop their strategy and policy but will not develop test scripts in general or for specific devices.

Both Premier and ECRI presented essentially the same message, i.e., seeking compliance information from manufacturers is the best approach.

I did a brief audience survey to assess opinions about testing. As expected, opinions varied widely. Some hospitals were testing all devices, some were testing a defined sample, some were making decisions on each item, and some were testing only if no acceptable compliance information was available.

The attendees were highly involved, especially in the panel discussion. Attendees, focusing mostly on the lack of intimate knowledge of the device and the wide variety of operating modes, raised many arguments supporting not testing, e.g., the occurrence of alarm conditions.

Many NY hospitals and hospital systems were heavily committed to user testing and testing of their entire inventory. I pointed out that Premier would reconsider testing a device if it obtained reliable information calling into question manufacturer's statements. I described the information from the EKG manufacturer in Ann Arbor who stated that all devices manufactured since 1953 were compliant. The company was aware at that time and hence designed everything for a four-digit year. I described the difficulty in defining a 'reputable' manufacturer. Alternatively, MHS assesses the compliance statement itself. MHS compares the manufacturer's compliance definition with its own. MHS is satisfied when that definition agrees with theirs.

No one in the audience who was testing could cite an example of a clinically significant conflict with a manufacturer's compliance information. No one could provide an example of a clinically significant Y2K problem, except Skorup, who mentioned a radiation treatment-planning computer. He repeated that ECRI had not yet received any reports from hospitals of clinically significant Y2K problems. Several people mentioned the internal conflicts over the philosophy for testing between the biomedical engineering group and the legal / risk management groups. One person wondered how the difference can be resolved between the "national standard" represented by ECRI / Premier and the "NY standard", especially as it might relate to future lawsuits. The "NY standard" represents the Test Everything approach. Susan Waltman, the Senior Vice President of the GNYHA mentioned that the litigation situation is unpredictable and can be different in different locations.

I mentioned examples of Y2K hyperbole, e.g., the dialysis machine described in *USA Today* and the unreliability of some user testing information posted on the web. An example is the Rx2000 listserv item in which seven manufacturers and 15 devices were purported to have 1999 problems when, in fact, only two devices did. I voiced concern over the wording of the FDA Device Malfunction letter that addressed this issue.

Many hospitals were labeling devices with *Y2K Approved* language. No one acknowledged placing *Not Y2K Compliant* labels. One hospital plans on labeling non-compliant devices with information for the users as MHS does.

I noted that some manufacturer test procedures were quite lengthy and that some hospitals that request procedures report a poor response rate. General agreement appeared to exist with the majority of our arguments regarding testing and labeling. I mentioned that part of the MHS due diligence is being responsible guardians of the institution's resources. Major cost pressures and many other competing programs are essential for clinical and business operations.

All in all, it was a good opportunity to share information, perspectives, and professional opinions on various facets of Y2K.



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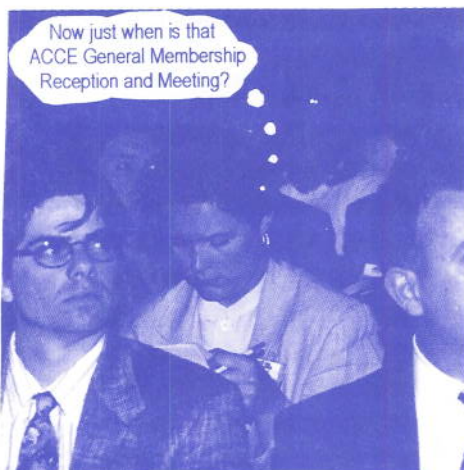
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Reception and Meeting?

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ACCE Meeting?
Tuesday evening
June 8

ACCE's Bob Berkovits (l) pumps vendors for info

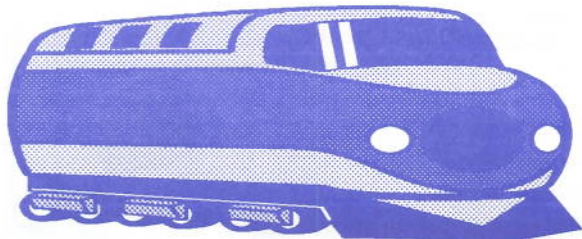
What's an Engineer, continued from page 3

protecting a public incapable of assessing engineering competence. Certification has been an effort to provide peer group recognition of engineering competence to enhance employability. However, the majority of engineers are employed where registration is not required and certification seems to provide little value.

Two recent issues of the IEEE newsletter, *The Institute*, further highlight the difficulty: An article by Gregg Gillespie, *Survey shows public has a lot to learn about engineer*, opens with the statement "A survey of the U.S. public's perceptions of engineers and the engineering profession reveals that the majority of the public feels it is not very well informed about engineering." Further on in a paragraph titled **Choo Choo** he notes that when asked what first comes to mind when they heard the word engineer, "Twenty-seven percent responded 'designs/draws/plans' and twenty-six percent responded 'builds/constructs/makes'. The third most typical response was 'train operator.' Engineers were also perceived as 'lagging behind both scientists and technicians on the issues of social responsibility.'" ⁴ An article by Julie Sheridan, *Engineering: In need of a makeover?*, notes that "Young people are drawn to and emulate public images. What public images exist to interest and educate them about engineering? There is no 'LA Engineer' television program, portraying the excitement of engineers at a high-tech start-up just about to go public. Nor are there any public service announcements describing engineers' contributions to medicine, space, the environment, and our quality of life. Maybe we need to hire a public image consultant so young people will associate engineers with innovation such as the Internet, cell phones, flat panel displays, the Mars expedition, magnetic resonance imaging and lasers for surgery". ⁵ The challenge continues for engineers to find ways of commanding more recognition, to have the public distinguish between the person who drives the locomotive and the person who advances scientific findings to socially and economically beneficial products.

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5. **IEEE**, *The Institute*, March 1999, Vol. 23, No. 3.



American Institute of Medical & Biological Engineering Council of Societies Business Meeting Summary

Caroline Campbell, cacl@mhg.edu

The general theme of the AIMBE Council of Societies Business Meeting was expanding the recognition and influence of medical and biological engineers. This theme has been revisited by AIMBE in several forums including at last winter's Summit meeting in Minneapolis, at a symposium at NIH last summer, and at the National Science Foundation symposium on "Federal Programs in Bioengineering". A new vision for bioengineering at the National Institutes of Health is in development in order to promote research in the field. Bioengineering integrates physical, chemical, or mathematical sciences and engineering principles for the study of biology, medicine, behavior, or health. It advances fundamental concepts, creates knowledge from the molecular to the organ systems level, and develops innovative biologics, materials, processes, implants, devices, and informatics approaches for the prevention, diagnosis, and treatment of disease, for patient rehabilitation, and for improving health. As such, bioengineering research receives funding for bioengineering research is awarded across the various Institutes. However, purely bioengineering research which tends to be related to development of techniques, processes, and equipment rather than related to the testing of a specific hypothesis may warrant a review process that is different from that used to review hypothesis based research. With increasing recognition of the important role of bioengineering, it may now be appropriate to dedicate an Institute to bioengineering research inclusive of imaging and informatics. A bill to this effect was previously introduced in Congress without success. Although the bill was unsuccessful, it succeeded in gaining recognition for the profession. Lobbying is underway to re-introduce a similar bill. There will be a public hearing at NIH this spring to obtain feedback on recommended changes to the NIH grant review process.

A flurry of other activities is underway to further promote the visibility and recognition of the profession.

- AIMBE is considering distributing a list of grant opportunities that would be updated and distributed annually.
- AIMBE is applying for membership in the International Union of Physical and Engineering Science in Medicine. Two members of AIMBE have been invited to attend the next annual meeting in Budapest.
- A symposium will be held at NIH in June on Biomedical Imaging, including imaging at the molecular level.
- To further promote the profession, a promotional brochure about AIMBE will be developed. The brochure will serve multiple purposes, including use in a membership drive. A PowerPoint presentation may also be developed for the same general purposes.
- AIMBE is a national sponsor of the World Congress on Medical Physics and Biomedical Engineering in July 2000 in Chicago.

ACCE News

Position Available -- Clinical Engineer

Our department of Biomedical Engineering is acknowledged to be one of the finest in the nation. Its members are known for their technological expertise and resourcefulness.

Enhancing patient care by maximizing safe and effective use of clinical equipment, technicians and engineers function as a cohesive team of experts. We are looking for talented, experienced individuals to help us fulfill our mission. When you join us, you'll receive a highly competitive salary as well as a generous benefits package that includes health insurance and tuition assistance.

As a clinical engineer in a multi-hospital system, you will provide clinical engineering technical support to all equipment users, evaluate new patient care equipment, and assist physicians and clinical staff in technical research projects and equipment operations. You will provide educational and training seminars on the operation and use of equipment, instruments, and devices for all clinical, technical, and nursing staff. You will complete quality assurance inspections, maintain equipment, and troubleshoot and repair equipment and systems.

To qualify, you should have 1-2 years of related experience and a Bachelor's degree in Biomedical, Clinical, or Electrical Engineering.

For further information on this excellent opportunity contact:



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Senior Employment Specialist
110 Irving Street, NW
Washington, DC 20010
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*The ACCE track at **HealthTech '99** will help you to stay abreast of new developments in biomedical technology management.*

SESSIONS INCLUDE

MONDAY

April 26, 1999

Indicators of Service Quality

Greg Davis, Mo Kasti, Wayne Morse, Dave Dickey

Risk Reduction and Sharing

George Johnston & Marv Shepherd

Asset Management/Outsourcing

Malcolm Ridgway, Frank Painter, Mike Carver, Larry Hertzler

FDA's Proposed Regulation of Servicers: The Sequel.

Binseng Wang, Tom Bauld, Casper Uldriks, Elliot Sloane, Malcolm Ridgway & Bernie Liebler

TUESDAY

April 27, 1999

Servicer Training

Manny Roman, Myron Hartman & Edward Ravenkamp

Telemedicine & Wireless Telemetry

Yadin David & David Natale

Year 2000: Is Now Too Late?

Tobey Clark, Bob Larkin, Thomas Shope, Jim Keller, Binseng Wang

JCAHO EC Standards: Interpretation Challenges and Improvements Needed

Al Levenson, Ode Keil, Larry Hertzler & Britt Berek

International Training

Elliot Sloan, Bob Morris, Antonio Hernandez, Tom Judd & Sam Miller

WEDNESDAY

April 28, 1999

ISO-9002: Is It Really Applicable to CE Departments?

Dave Simmons, Tim Ritter & John O'Donnell

Medical Device Accidents:

Investigative Considerations for ISOs

Mark Bruley & Marv Shepherd

Manuals in CD-ROM

Al Jakniunas, Don Trombatore, John Reich, Ray Seblock, Gerald Zion, Dave Kaputa, Carl Dimario



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Change and appreciation of medical equipment

Dear Dr. Dyro - Life has a way of presenting unexpected challenges that lead to significant changes in one's plans. I have experienced such an event that has changed the focus of my research. I am an electrical engineer with twenty years experience in instrumentation and controls. Fifteen of these years are in factory automation. August '98 I accepted a position as Assistant Professor of Engineering at Penn State University. My research focus WAS to be factory automation. I was diagnosed with multiple sclerosis March '99. My research focus IS NOW the development of the equipment that will bring experimental or laboratory procedures to the hospital, clinic, or public for diagnostic and/or treatment of disease.

Prior to January eighteenth, I had not experienced any symptoms of the pending exacerbation of MS. After multiple MRIs and a CAT scans, I have developed a newfound gratitude for those who have devoted time and effort to the development of medical equipment. To date, the symptoms experienced have not had a negative impact on my duties at Penn State or on the engineering projects that I am involved in as a consultant. I look forward to the opportunity to be of service in any manner in which I may be of assistance and am grateful that I will have the time during the summer to devote to this effort.

I am writing to solicit your help in identifying possible positions where my involvement would be beneficial. The ideal position would be one where my knowledge of machine control, instrumentation, computers/microprocessors, and data acquisition would be valuable. In addition, I have training and experience as an electronics technician in the U.S. Navy, which have in the past proven invaluable in the startup stage of new products and equipment.

Thank you for your time in assisting me in this effort. I look forward to any response that you feel may be helpful.

Ralph V. Staus PE, Assistant Professor of Engineering
Penn State Berks, P.O. Box 7009, Reading, PA 19610-6009
610-396-6211, 610-396-6024 fax

"In a time of drastic change it is the learners who survive; the 'learned' find themselves fully equipped to live in a world that no longer exists." Eric Hoffer

ACCE News

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Calendar of Events

- HealthTech '99, April 25-28, 1999, Baltimore, MD, 401-766-4142.
- 18th Southern Biomedical Engineering Conference and the 2nd International Conference on Ethical Issues in Biomedical Engineering, May 20-23, 1999, Clemson University, Clemson, SC. 864-656-7603; ssaha@clemson.edu; www.techexpo.com/
- ESEM '99, The Fifth Conference of the European Society for Engineering and Medicine, May 29-June 2, 1999. <http://www.esem.org/esem.html>.
- DITEC '99, June 2-4, 1999, Cleveland, OH. 440-519-1555.
- 45th Anniversary Conference ASAIO, June 2-5, 1999, San Diego, CA. 561-391-8589.
- 2nd ACCE Symposium The Future of Clinical Engineering, June 5, 1999, Boston, MA. Brian Porras 704-679-5056, 704-527-5223 fax.
- ACCE Annual Meeting, June 8, 1999, Boston, MA. Frank Painter 203-261-3921.
- AAMI Annual Meeting, June 5-9, 1999, Boston, MA.
- The 3rd International Workshop on Biosignal Interpretation (BSI99), June 12-14, 1999, Chicago, IL. 312-996-3422
- Eighth Annual National Expert Witness and Litigation Seminar, June 17-18, 1999, Hyannis, MA. SEAK, Inc. 508-457-1111; 508-540-8304 fax; www.seak.com.
- XXVIth General Assembly of the IURS, Aug. 13-21, 1999, Toronto, Canada, 613-993-7271; ursi99@nrc.ca.
- 4th Asia-Pacific Conference on Medical and Biological Engineering, Sept. 12-15, 1999, Seoul, Korea, <http://bme.hanyang.ac.kr/APCMBE99>
- BUDAMED '99, Sept. 13-15, 1999, Budapest, Hungary. <http://www.fsz.bme.hu>; arato@fsz.bme.hu; (+361) 463 2699; 2204 fax.
- 5th International Conference on Biomedical Engineering, October 17-20, Tianjing, China, (+86) 10-65265035, (+86) 10-65136537 fax, yxgch@homeway.com.cn
- EMBEC '99, Nov. 4-7, 1999, Vienna. +43 1 588 04-0, +43 1 586 91 85 fax.
- 19th Annual Northeastern Biomedical Symposium, Nov. 8-10, 1999 Manchester, NH. Info: www.nnesbt.org.
- World Congress on Medical Physics and Biomedical Engineering, July 23-28, 2000, Chicago, IL. <http://www.wc2000.org>.

ACCE News

ACCE Board Highlights

Jennifer C. Ott, Ottj@slucare1.sluh.edu
Thursday, March 11, 1999

Present: J Ott, F Painter, C Campbell, B Wang, J Wear
Excused: J Secunda, J McClain, T O'Dea, J Dyro, B Morris, B Morgan, B Porras, K Galanopoulos, S Miller, B Patail
Minutes of the Last Board Meeting (J Ott): The minutes were reviewed and unanimously accepted.

Officer Reports

President (B Morris)

- Morse Medical Distribution Agreement was finalized and processed for signature.
- WHO listserv for clinical engineering will be sponsored by ACCE
- World Congress on Biomedical Engineering and Medical Physics, encompassing all the international and national biomedical engineering groups, will be co-sponsored by ACCE. ACCE will organize a clinical engineering track with George Johnston and Frank Painter coordinating.
- A General Membership meeting will be held on Monday, April 26 at HealthTech in Baltimore.
- Series of meetings coincident with AAMI meeting in Boston in June. Executive Committee on Sunday, Board Meeting on Monday, and General Membership on Tuesday.
- Strong and steady growth of ACCE dictates need for business manager. Those interested please contact Bob Morris.

First Vice President's (Jim Wear for J Secunda)

- The 1999 Teleconference Series presents a strong educational offering. See details in this issue of ACCE News, page 6.

Second Vice President's (Frank Painter for B Porras)

- Second ACCE Symposium, *The Future of Clinical Engineering - Information Systems and Clinical Engineering Relationships*, will be held in conjunction with AAMI this year. AAMI will coordinate, assist with costs, and advertise.
- Year 2000 Symposium – The California Medical Instrumentation Association (CMIA) has provided their assistance to help organize the symposium when AAMI is in San Diego. Dean Skillicorn will coordinate with CMIA.

Secretary (J Ott)

- The 1999 Directory will be put together in April.

- Plagues will be presented to outgoing officers and Fellows at the ACCE Annual General Membership Meeting.

Treasurer's Report (Frank Painter for B Patail)

- Income exceeds expenses putting ACCE ahead of budget.

Committee Reports

Membership (K Galanopoulos)

- Bob Larkin and Jack Spears were elected as new members.

Education (J Wear)

- Topics for 1999 include Y2K, Risk Management, Telehealth, JCAHO, Career Development, and Critical CE Skills. See this issue of *ACCE News*, pages 4 and 5 for details.
- ACEW curriculum for Moscow and Africa is developing.

International Committee (S Miller – written report)

- The brochure, *Clinical Engineering Support to Developing Countries*, is at the ECRI printers. It will be distributed in the next newsletter and at HealthTech 99. Copies will be sent to Board Members, WHO and PAHO. Additional copies may be obtained from Al Levenson.
- A plan for U.S. members to offer “financial assistance for membership dues to international members from countries with severe monetary difference conditions” was presented.
- A plan for an International Technical Library was discussed.

Nominating Committee (Frank Painter)

- Painter seeks members for nominating committee.

Other Activities

HealthTech 1999 (B Wang)

- Wang looks forward to successful ACCE participation in HealthTech 1999.

FCC Telemetry project (C Campbell)

- The Task Force has finalized their position. See this issue of *ACCE News*, pages 6 and 7.

ACEW in Hartford, Moscow, and Africa (F Painter)

- Hartford is scheduled for the 3 days following AAMI. Painter will chair.
- Yadin David will chair the Moscow ACEW in September.
- Tom Judd will chair the African ACEW in Nov 1999.

Second ACCE Symposium

The Future of Clinical Engineering: Clinical Engineering & Information Systems

On Saturday, June 5, 1999, a panel of visionaries from a variety of backgrounds will lead a discussion of the future relationships between clinical engineers and hospital information systems departments. Methods used to develop partnerships between Clinical Engineering and HIS to improve the clinical engineer's position going into the future will be discussed. Adequate time is planned to maximize audience participation for questions and answers, brainstorming, and alternate points of view. The formal program will run from 8 AM to 11:30.

- Brian Porras – Technology Assessment Specialist, Premier, Inc. (Host and Moderator)
- Dean Athanassiades – Consulting Manager, Hewlett-Packard Company (vendor perspective)
- David Walczak – Vice-President, BayHealth Medical Center (hospital administration perspective)
- Bill Short – Director, Contracting (IT), Premier, Inc. (health care market perspective)
- Richard Schrenker – Clinical Engineer, Massachusetts General Hospital (hospital-based clinical engineer's perspective)

***This symposium is being held as part of the AAMI 99 Annual Meeting
Hynes Convention Center, Boston MA***

***When registering for AAMI, indicate that you wish to attend the ACCE Symposium
(B-1) on Saturday, June 5.***

By registering for AAMI 99 you will have access to over 75 educational programs, and an Exhibit Hall featuring leading medical equipment manufacturers and service providers.

For information contact AAMI, 703-525-4890 ext. 260, education@aami.org or Chairman Brian Porras, 704-679-5056, brian_porras@premierinc.com