

Highlights

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The Alberta Clinical Engineering Society Newsletter

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ACES Update

Several of former ACES executive members and other interested parties recently had discussions at the CMBES conference held in Calgary. We feel there is still a need for ACES and are considering reestablishing it. Initially it looks like we have two options: 1) starting ACES again as it was or 2) starting ACES again as a chapter of CMBES. Your feedback is required!

Please take the ACES Survey at: <http://www.aces.ab.ca>

ACES History

by Alex Sackiw

When asked by a former ACES president to write up a historical article on the society, I thought about facts, names and places...but that's not really where ACES has made history. It's more the ideology of why ACES was and where it's going.

So, where did they come from anyway, these biomedical types who've joined together to create trade shows, conferences, telehealth presentations and even the ACES picture calendar. After a short two year sabbatical, they are poised to rise again. Some things in life just need to be done. Being a volunteer organization, pauses, peaks, valleys and the rush of success are all part of the process.

ACES was formed in 1994 by the joining of two groups; one based in northern Alberta: Northern Alberta Clinical Engineering Society (NACES) and the other from southern Alberta: Alberta Biomedical Engineering Technology Association (ALBETA).

The reason why techs and engineers in Alberta felt the need to create such an organization all the while working full time is because we were not from Toronto or Vancouver or Moncton or any other place large groups gather. It's because we were scattered all across the province of Alberta. In the capital, a few techs here, some there, an engineer or two with the same scenario in Calgary plus, small centers with a couple of "do-it-all" techs and no engineers. Can you say isolated? We needed a mechanism to share information, compare experiences and most importantly get to know each other to share our technical problems and solutions. Hence the trade shows, conferences, and educational sessions. No, we are not a support group. We are a paramedical professional association of technicians, technologists and engineers striving to better our "profession", provide exemplary support to clinicians and most importantly, ensure and enhance patient safety where ever possible. If that sounds pompous, it's because I am very proud of who we are and what we do; best dam* job on the planet.

Alex Sackiw
Biomedical Technologist
ACES president 2003-2005

ACES Timeline

Late 1980s to Early 1990s – ALBETA formed
1992 or 1993 – NACES formed
1994 – Alberta Clinical Engineering Society (ACES) formed
1994 – ACES Bylaws Written
1994 – ACES logo was developed by Ron Van Vliet.
1995 – ACES crest was developed by Dave Burry.
1996 – ACES website goes live
1998 – ACES hosts CMBEC24
1999 – First ACES / IBET joint Western Regional conference
2002 – ACES Bylaws Revised
2002 – ACES offers free student memberships
2007-2008 – ACES inactive
2009 – Time to reestablish ACES?

2009 ACES Board?

Your name here!

If you are interested in helping reestablish ACES please contact Denny Mellott
Denny.Mellott@albertahealthservices.ca

ACES Crest



Did you know that the ACES crest was developed by Dave Burry using Corel and 1st appeared in the March 1995 issue of the ACES newsletter?

BMET featured in 30 Best Careers

by Denny Mellott, C.E.T.

In December of 2008 Marty Nemko published a series of articles on “The 30 Best Careers for 2009”. Can you guess what made the list? Yes being a BMET made the list! Nemko uses the following overview for a BMET career: “Imagine you’re in a hospital bed, hooked up to a heart monitor and a ventilator. Those machines had better be working properly. Fortunately, they almost always are. Whom do you thank? A biomedical equipment tech.” To see what other careers made the list visit the link below and be sure to read the BMET article! <http://www.usnews.com/sections/business/best-careers/index.html>

Fun Facts

For the new east tower at the Peter Lougheed Hospital in Calgary 10,000 feet (3 kilometres) of coax cable has been brought in to install the telemetry antennae system for the 4th floor.

Calgary BMET Week

The Mayor of Calgary officially recognized Biomedical/Clinical Engineering Appreciation Week. Please see the official letter at: http://www.aces.ab.ca/2009_calgary.pdf

Book Review – Biomedical Equipment Technicians by Roger Bowles

by Denny Mellott, C.E.T.

In 2008 TSTC Publishing published the book Biomedical Equipment Technicians (ISBN 978-1-934302-29-3) by Roger Bowles. Roger is the chair of the Biomedical Equipment Technology program at Texas State Technical College Waco. The book is touted as “Your One-Stop Guide to a Career as a Biomedical Equipment Technician”.

The book itself is broken into 3 chapters. The first chapter focuses on what being a BMET is all about; including: BMET overview, employment outlook, salary ranges, career paths, job titles, job duties, work schedules, employers, and necessary skill sets. The second chapter focuses on education and certification. The education section highlights associate degrees (2 years), bachelor’s degrees (4 years), as well as continuing education. The certification section highlights CBET (Certified Biomedical Equipment Technician) as well as CRES (Certified Radiology Equipment Specialist) and CLES (Certified Laboratory Equipment Specialist); it also touches on dialysis and computer certifications. The third and final chapter is devoted to a directory containing BMET education programs, employers, manufacturers, BMET associations, industry publications and more. Also splattered throughout the book are some interesting BMET profiles from various areas of the BMET profession.

I found the book to be an interesting look into being a BMET in the United States. If you are planning on relocating to the United States, I would recommend picking up this book as a reference. If you are not planning on work in the United States it is still an interesting read. What is needed is a Canadian version of this book! Any volunteers?

CMBEC32 Review

by Orrin Stephen

The Canadian Medical and Biological Engineering Society had their annual conference here in Calgary May 19th to 22nd, which I personally found both educational and enjoyable. The conference had Clinical Engineering seminars, Academic seminars where university professors and grad students presented their research findings, a trade show, and there were continuing education courses which focused on teaching specific areas of expertise. I did not get to attend many of the academic seminars, but they covered a wide range of topics; biomechanics, electrophysiology, imaging, tissue and cellular engineering and more. Similarly the Clinical Engineering seminars also covered a wide range of topics: patient safety issues, RFID, IT & Clinical Engineering convergences, risk management, regulatory affairs, BMET education and much more. Some were better than others, but overall they were definitely worth while. The trade show is always worthwhile, even when you know most of the vendors already; there are always things you find out that turn out to be very useful. The one continuing education course I took was also very useful; it covered a lot of information in limited period of time.

The conference was also a great opportunity to catch up with people I haven’t seen for quite a while, people I’ve met through ACES, NAIT, and from some of the places I’ve worked at around the province. The only down side was that only a few people from each site managed to make it to the conference, and some places didn’t send anyone, which is a shame considering it will not be this easy to get to for quite some time. The next conference will be in Vancouver, June 15th to the 18th, 2010.

Bill SB1193

by Denny Mellott, C.E.T.

Bill SB1193 is currently going through the Texas Legislature. Why is it of interest to us here in Canada? It could possibly be the 1st instance of a law that has requirements (BMET education or CBET certification) for those working on medical devices. Whether it is just a blip on the radar or the start of

sweeping changes for our profession is yet to be seen.

Alberta Health Services Update

by Denny Mellott, C.E.T.

On March 31, 2009 Alberta's health regions ceased to exist and came under the one entity known as Alberta Health Services. A new CEO, Dr. Stephen Duckett, was announced and the Alberta health care merger has begun. The organizational chart has been released and one box that is of great interest to us is Provincial Lead Clinical Engineering. Who will be the Provincial Lead for Clinical Engineering? The posting closed on June 3, 2009, but at this time we have not heard anything. Whoever lands the position will have a huge task of bringing Clinical Engineering in Alberta under one umbrella. Hopefully the selected individual will be up to the task.

NAITline

by Roy Sharplin

Students:

The NAIT BET program reduced its intake quota last summer to 20 students. We over filled our September intake to 24 in the hope of graduating a class as close to our quota of 20 as possible. This spring we are graduating 21 students and are very proud of this thoroughly enjoyable class.

We are currently enjoying a strong application pressure for next fall's intake, we currently have 92 applicants to select our 24 new students from.

There were 20 BET graduates in the spring of 2008, compared to the quota of 24. According to the 2008 Graduate Survey, 92% of these grads found jobs by October of 2008. The job market continues to be strong.

Staff:

The Biomedical Engineering Technology program currently is budgeted for 3.5 full time staff positions. These instructors are

utilized as a part of the greater pool of instructors within the Electronics Engineering Department. We were able to hire another biomedical specific instructor; Matthew Tracy started with us in November 2008. Matt has been an excellent addition to our team; we now have 3 instructors with direct biomedical industry experience. The final 0.5 instructor position is filled by Richard Rusterholz, who is providing his programming and micro controller expertise to our program.

Shared with the Electronics Engineering department and CNT program are six technical support personnel and a Co-op administrator.

Accreditation:

The accreditation organization (CTAB/CCTI) has introduced new National Technology Benchmarks (NTB). As a result of this, we have begun preparing for our Biennial Review submission, which will be submitted March 1, 2010. The program continues to maintain a good relationship with ASET/CTAB.

Note: CTAB is the Canadian Technology Accreditation Board
CCTI is the Canadian Council of Technicians and Technologist, of which ASET (Association of Science and Engineering Technologists of Alberta) is a member

Curriculum:

The schedule of courses has not changed from last year; however continuing redevelopment of course curriculum is the norm. We do have some plans for the future, including:

- Moving the microprocessor course (BET444) to the second semester.
- Changing the nature of the C++ programming course (Richard Rusterholz)
- Continue to adapt the Data Communications course to better meet the needs of BET.
- Creating a BET Project course in the 4th semester.
- Modifying our basic electricity courses to include some of the

measurement technique content from our BET 232 course.

If you have any questions regarding our Biomedical Engineering Technology program please drop me a line.

Roy Sharplin
Associate Chair
Biomedical Engineering Technology, NAIT
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BCITline

by Anthony Chan

This year is the 40th anniversary of graduation (1st graduating class in 1969) for the BCIT BMET Program. Twenty students graduated in June 2009 and are available for employment.

Our Program completed the Canadian Technology Accreditation Board's (CTAB) biennial review this spring using the new outcome based "National Technology Benchmarks". We were also selected to go through the random audit. The site review team visited BCIT on May 4, 2009. Although we have not received official results from CTAB, we were told by the review Chair that they found our Program to be strong and met all the core requirements.

The Program implemented a new mechanical skills training workshop in 2008. This is a mandatory course in the BMET curriculum. First year students are required to attend this one week full time workshop after their final exam in May. The objectives of the workshop are:

- To provide BMET students with correct nomenclature and application of hand and machine tools as employed in the profession.
- To develop mechanical and material (including metals, plastics) working skills.
- To develop and emphasize safe working habits appropriate to shop activities.

The program has launched in the fall of 2008 a new online continuing education course in "Human Factors Engineering in Health (BMET7104)". This is the third online continuing education courses being offered by our Program for BMET graduates and

working biomedical engineering professionals.

Using the final term project course, 3 groups of BMET students entered the "Awards of Excellence in Engineering Design Competition" organized by the ALS (Amyotrophic Lateral Sclerosis or Lou Gerhig's disease) Society of B.C. Among all the entries from University of BC, Simon Fraser U, Emily Carr U of Art and Design and other BCIT programs, two of the six awards were won by our students. See web posting for more details:
<http://www.bcit.ca/news/releases/newsrelease0604090000002.shtml>



Image Above: BCIT Students & ALS Patient with "Single Click Communication System"

SD Memory Warning...

or any solid state memory device for that matter!

by Alex Sackiw

It has become apparent that digital camera's have great potential to provide instant feedback about that "once in a lifetime" picture you just took. Did it turn out or flop? Simply flip a switch and voila! There it

is...huh!? What the!? "Memory Card NOT FORMATTED - FORMAT MEMORY CARD BEFORE USE"...or your camera could say something similar; MEMORY CORRUPTED comes to mind. What happened? It was fine after the wedding or on that exotic beach holiday you just flew back from. Darn cheap memory card!? Well, maybe it's not the memory card...maybe; just maybe it's that airport screening you just went through. Go ahead and talk to your co-workers and friends who fly regularly...I've been doing just that and low and behold, frequent fliers seem to be suffering an unusually high rate of digital camera memory chip failures. Something may be damaging these cards and I suspect it's those X-Ray machines that scan your carry-on luggage. They will tell you its perfectly safe and doesn't damage your equipment, but over the last 2 years my camera and I took over 1,500 pictures and 14 flights. Sure enough, my precious pictures of Machu Pichu were lost when I was scanning my images in a hotel room. I started to think about it and I remembered my school days in "biomed camp" where we were asked to X-Ray our pens, watches and calculators just for... well...fun. My calculator was replaced shortly thereafter.

Later this year I plan to test some SD cards to see what mA and KV settings will destroy a good memory card but until then, I would like to caution you and all those taking their camera's on a plane to remove your memory cards from your camera and put them in your pocket prior to x-ray screening of your carry-on; better safe than sorry. Airport security may question that bulge in your pocket as they did me (5 cards bundled together) but showing them and explaining that x-rays corrupt the memory was good enough to allow me to continue. If in fact your memory card has "lost its mind" and it's been accompanying you on some airborne excursions, please let me know and I will include those "stories" in the next ACES newsletter. Please reply to alex.sackiw@albertahealthservices.ca with "SD card" in the subject field. On a happy note, I was able to recover some pictures using a generic memory card recover tool even though the camera and computer both said the card was not formatted. Search the internet for one from your card's manufacturer or grab a generic copy which will run on your operating system... and good luck.

Northern Lights Health Center Update

by Graham Bruce, C.E.T.

Greeting from the north east corner of our new "ONE" world of Alberta Health Services where we all wait for the continuing changes to unfold. Reviewing the last update that I could find (Fall 2006) I will try to update what has transpired since then and it impact on the Biomedical Services Department.

In 2007 there were changes in management with in the Building Services Department that impacted Biomedical Services. Biomed reported directly to the Facilities Director since its inception but otherwise ran itself, the facilities director left and after a year an interim contracted management was put in place along with the formation of a Project Group (contracted persons), all of these people coming from outside of Health Care. During this transition a consultants reports was done, addressing the Clinical Engineering needs of the Region, remember that at this time the region included the High Level area in Northwestern Alberta. This report indicated that we needed more Biomed, 2-4 for the region and a Coordinator along with recommendation for space, etc., so the interim management proceeded to act upon this report, and hired a Coordinator. After 20 years of doing the job and the last 15 solo, I suddenly had to report to someone else, QUITE A SHOCK. The new position took affect September 2008 and in December 2008 another Biomed was hired, based on the consultant report, a junior position, so now we are three. Since then the interim management contract has expired and a permanent Building Maintenance Manager, director position eliminated, has been hired, all of this coinciding with the creation of Alberta Health Services and the "ONE" concept over the last year or so.

While this hiring was going on we were in the lead up to an Accreditation and we were spending money like water on all kinds of new equipment throughout every department, projects being approved all over the place and a major project underway, basically complete chaos as we tried to spend the surplus money before the end of March 2009.

Reviewing the Fall 2006 letter, I can update some events noted in that letter, MRI fully installed and going strong, with it came a 64 slice CT machine (up from 4 slice unit) both Siemens products. D.I. is now going more digital with a new totally digital trauma room unit and new digital mammography unit, again both Siemens units, leaving only two aging rad fluoro units to be replaced.

Baxter Healthcare Canada has started another deployment of an upgrade to their infusion pumps software; we are scheduled sometime this year.

Family Health moved to their new digs and their old space was completely gutted and rennoed for the new home of Ambulatory Care Department. It is now divided into three Zones, Multi purpose Clinic area, (5 examining rooms), the Day Treatment/Scope area (8 beds, two scope rooms and two new dual scope washers and a Steris 1 washer), with a separate Chemo Therapy space (4 beds) (satellite out of Edmonton). Finally there is Respiratory Therapy and Stress test (two units) completing the package.

This project received all new equipment and I do mean ALL new, from lowly otoscopes all the way to Stress test, everything absolutely new, every bedside a new vital signs monitor (Welch Allyn), a 3 channel volumetric infusion pump, a new oto/othalmo scope, and so on, you can imagine the amount of work Biomed did inventorying and incoming inspecting, on top of compiling a complete inventory of the building in time for Accreditation and trying to get the P.M. program updated.

Maternal Child has acquired 6 new CosyCot units to bring their total to 11, each one equipped with a "NEOPUFF" system and now Fischer & Paykal has announced that they are no longer going to market CosyCot in North America, they will support it though. Despite this Maternal Child are very happy with these units.

The Pharmacy made a major move, from the sub-basement all the way to the 5th floor, their old space next to MDC will be taken over by MDC, our satellite Renal Dialysis unit is moving to a larger space, down the hall from where it is currently operating, it will increase from four beds to six beds, meanwhile on second and third floor

renovations proceed to allow patients rooms to be converted back to patient rooms as opposed to offices and storage spaces.

As you are all aware many projects and equipment acquisitions are in LIMBO due to Alberta Health Service coming on stream and restructuring health care everywhere.

In our facility this has affected many plans, renovation to ICU, expanding Emergency into the old Ambulatory Care space, upgrade all Critical care patient monitoring systems (ICU, Emerg and O.R. all to be on the same platform and linked), six new anesthetic machines in O.R., retro fitting nurse call system hospital wide, plant and maintenance projects long overdue (our building now all most 30 years on). There is even a plan to relocate Biomedical to a larger space. The new budget numbers are supposed to come down on July 1st and a rumor runs that there will be 5% reductions; how this will affect the Biomedical department is yet to be determined, but maintaining 3 people may become an issue.

In the Fall of 2006 update, I referred to our new upgraded expanded telemetry system in ICU and the fact that an oversight left it unable to communicate with the central, no database server link, this was rectified and things went well for a time. Philips said it was okay to upgrade the telemetry system; however they forgot to take into consideration the combining network between new antennas and the new CPU unit so after time we began to have problems with dropout and signal reception. After finding that the combining network was under rated, we had to upgrade the network. It had me wanting to pull my hair out a one point since I could not figure out why it was not working like they said it would; since it was corrected it has worked perfectly.

Another significant change in the way things are done, is the introduction of Vocera, a hands free voice activated communication system, the first unit to go live is the Mat child department and by years end the whole facility will be integrated. This should reduce phone traffic through our central phone system and reduce response times and improve communication services. Biomedical/facilities are due to go live in early July.

How will Alberta Health Services deal with the issues of Biomedical/ Clinical

Engineering Services within Alberta, here we report to Building Services, others report directly to V.P.s, others are completely independent. Will we standardize P.M. procedures, inventory / P.M./ work order systems, will we become a homogenized unified process, or will we continue to just roll along as we have always done. What about the needs of smaller facilities whose equipment, need attending to.

No one knows at the moment.

Otherwise it is business as usual for each and every one of us.

Your colleague in the North East corner of Alberta

Graham Bruce

Letter from the Editor

by Denny Mellott, C.E.T.

I hope you enjoyed this edition of the ACES newsletter. The purpose of this issue was to update the Clinical Engineering community in Alberta and gather feedback from it to see what direction ACES should be going in. I hope that you will take the time to fill out the survey on the ACES website. In this issue we have done regional updates as provincialization is a slow process and we are not truly "one" yet. If you have any article ideas that would be of interest to our readers, please contact me.

Old Newsletters

If anyone has a copy of the last ACES newsletter, November 2006, can you please email it to denny.mellott@albertahealthservices.ca

I plan to add copies of old ACES newsletters to the website and I am missing this edition from my archive. I think I have all other editions, list below, but if you know of one I am missing please let me know.

ACES Newsletters

1995-03, 1996-02, 1996-11, 1997-06, 1997-10, 1998-03, 1998-05, 1998-11, 1999-05, 2000-05, 2000-12, 2001-10, 2002-01, 2002-04, 2002-08, 2002-12, 2003-10, 2004-03, 2004-10, 2006-11 (missing), 2009-06 (your reading it).