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The EDGE Newsletter

Equity & Diversity in Geoscience & Engineering

International Women's Day

submitted by Cathy Marr, P.Eng.

March 8th is International Women's Day. "Established in 1977 by the United Nations, this special day provides an opportunity to reflect on the progress made to advance women's equality, to assess the challenges facing women in contemporary society, to consider future steps to enhance the status of women and, of course, to celebrate the gains made in these areas." This year's theme is World-Wide Women (WWW): Surfing the Digital Revolution! In their words, "The advent of new information and communication technologies (ICTs), such as the internet has

revolutionized the way people communicate, access information, create networks, develop business opportunities, etc. While bringing important economic and social benefits, this revolution also poses challenges and risks. This theme allows Canadians to take a closer look at the impact of ICTs on women and their use as a tool for the empowerment of women and the promotion of women's equality." See www.swc-cfc.gc.ca/dates/iwd/index_e.html for more information.



International
Women's Day—
March 8

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DAWEG 12th International Conference of Women Engineers and Scientists (ICWES12)

Compiled by Margaret Li, P.Eng. and Lianna Mah, P.Eng.

drew delegates from 44 countries around the world.

Women engineers and scientists often experience feelings of isolation--of being the only female member of a research project, a project team, at a construction site, at meetings, conferences and seminars. However, the 600 women who attended the **12th International Conference of Women Engineers and Scientists (ICWES 12)** in Ottawa, Ontario experienced no such feelings of isolation.

From July 27 to 31, 2002, Canada hosted ICWES for the first time in the conference's 40-year history. Led by conference Chair, Dr. Monique Frize, P.Eng., the NSERC/Nortel Joint Chair for Women in Science and Engineering in Ontario, ICWES 12

What is ICWES?

Held every three years, the main goal of ICWES is to bring women and men engineers and scientists from around the world together to share and discuss technical expertise and experiences. ICWES 12 further challenged the world to a new vision of women's roles in and contributions to science, engineering, and technology.

APEGBC: A Sponsor of ICWES12

For more than 10 years, APEGBC and the Division for Advancement of Women in Engineering and Geoscience (DAWEG) have

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Did you know that:

- In 2001, women constituted 7% of the licensed engineers in Canada (compared to 3% in 1990).
- APEGBC recommends LEED™.
- March 8th is International Women's Day.

DAWEG ICWES 12 (con't)

(Continued from page 1)

been strong advocates for the advancement of women in engineering and geoscience. Many of DAWEG's initiatives, such as mentoring and career awareness programs, have become mainstream APEGBC programs that have paved a smoother path for young women and men entering the professions.

As advocates for women in engineering and geoscience, APEGBC, a conference sponsor, DAWEG, and the Canadian Council of Professional Engineers (CCPE) sponsored six delegates from BC to the conference.

Liaising With and Learning From Other Organizations

International presenters from organizations similar to DAWEG shared their work, achievements, hopes, and dreams to promote women in engineering, science and technology. Their initiatives include mentoring, networking, and influencing policy bodies. Margaret Li, P.Eng., APEGBC Councillor and past DAWEG Chair, states, "It is exciting to see what has been achieved by organizations similar to DAWEG. We can share resources and work with each other to build a better future."

Some of these organizations include:

- Canadian Coalition of Women in Engineering Science and Technology (CCWEST)
- Society for Canadian Women in Science & Technology (SCWIST) (BC-based)
- Women in Science and Engineering (WISE)
- International Electrical and Electronics Engineers (IEEE) Women in Engineering Committee
- Society of Women Engineers (SWE) (US)
- Association for Women in Science (AWIS) (US)
- Women in Engineering (UK)

- Association of Women in Engineering (Ivory Coast)
- MentorNet

Global Issues

Around the world, the percentage of women in engineering and science is small. Encouraging, promoting, and advancing women in engineering and science are global issues. Statistics indicate that employment opportunities in science, engineering and technology will increase by 50% over the next 10 years; in the United States alone, more than 2 million engineers, scientists, and technologists will be required. Studies have identified the need for fuller participation of women in engineering, science and technology to meet the needs of our knowledge-based society. Furthermore, studies have indicated that diversity in the workplace fosters excellence.

- In Canada, a recent CCPE survey (2001) shows that the overall enrollment of women in engineering undergraduate programs has increased over the last 10 years to about 20%. However, the national percentage of licensed women engineers is only about 7%, compared to 3% in 1990.
- In the United States, women make up 10.6% of the engineering workforce. Statistics indicate that women who leave the engineering profession in the United States do so because they are not used to their full potential, are not being promoted/advanced, do not feel valued and/or they require more flexibility in their workplace.
- The Korean government has established a Ministry of Gender Equality to support higher participation of women. Some of the Ministry's initiatives are to include 30% women in every committee, appoint two female ministers, and set targets for hiring women.
- Although the first female engineer from Ivory Coast graduated in 1968, most African presenters said that female engi-

Understanding Engineers

There was an engineer who had an exceptional gift for fixing all things mechanical. After serving his company loyally for over 30 years, he happily retired. Several years later the company contacted him regarding a seemingly impossible problem they were having with one of their million-dollar machines. They had tried everything and everyone else to get the machine to work but to no avail. In desperation, they called on the retired engineer who had solved so many of their problems in the past.

The engineer reluctantly took the challenge. He spent a day studying the huge machine. At the end of the day, he marked a small "x" in chalk on a particular component of the machine and stated, "This is where your problem is." The part was replaced and the machine worked perfectly again.

The company received a bill for \$50,000 from the engineer for his service.

They demanded an itemized accounting of his charges.

The engineer responded briefly:

*One chalk mark: \$1
Knowing where to put it:
\$49,999*

"Learn from the experts. You will not live long enough to figure it all out for yourself."

Brian Tracy

DA|EG ICWES 12 (con't)

(Continued from page 2)

- neers are often isolated and marginalized.
- Male lecturers in Kenya ask their female engineering students for sexual favours in return for marks.
 - In Nigeria, women are responsible for the household. Female Nigerian engineering students say that they must go to the well after classes to get water, and then carry containers of water on their heads home to their families.
 - In Poland, professors of engineering are amongst the lowest wage earners in the country. The Polish Women's Entrepreneurs sponsored the wardrobe of the professor who spoke at ICWES, so that she could attend the conference in suitable attire.

ICWES 12 Challenge

Kathleen Sendall, P.Eng., Senior Vice President of Western Canada for Petro-Canada, spoke of the need for corporations to incorporate an employee-friendly work environment, including part time and flexible work hours, and provide customized career planning for their employees to attract and retain their human resources.

Terry Peach, Manager-Organization and Staffing with GE Canada, reiterated the need for corporations to manage their talent by helping employees to balance work and life. Terry also described GE's Women's network (over 5000 people world-wide) and how the former CEO (Jack Welsh) helped set up the network to improve opportunities for networking and mentoring.

To increase the participation of women in science, technology, engineering, and mathematics, ICWES 12 encouraged governments, corporations and organizations to:

- Incorporate diverse recruiting teams
- Take affirmative actions, e.g. assist women with career breaks, provide help

for starting a career, and devise awards to increase visibility

- Adopt and monitor the success of policies, e.g. develop gender monitoring and equality indicators, increase training/awareness, ensure gender balance in decision making
- Ensure open and equal-opportunity advertisement for all jobs
- Encourage family friendly employment measures
- Maintain targets of representation until critical mass (greater than 33% women) is reached
- Select people from diverse background.

Women can:

- Network with other women
- Build a network of mentors for support
- Mentor younger women
- Continue advocacy and influence policy development
- Increase visibility by participating in community, committees and cross functional teams
- Focus on improving soft skills in addition to technical skills.

International Network of Women Engineers and Scientists (INWES)

A highlight of ICWES 12 was the successful launch of the **International Network of Women Engineers and Scientists (INWES)**. INWES will be a world-wide network of women's organizations, with membership also open to corporations and individuals. Supported by funding from UNESCO (United Nations Educational, Scientific and Cultural Organization), IBM, the Society of Women Engineers, and Bechtel, INWES will:

- Oversee future international conferences for women in engineering and science
- Establish a website to share information
- Provide women in the science, technology, engineering and mathematics (STEM) careers with an international

Do you have A. A. A. D. D.?

I have recently been diagnosed with A. A. A. D. D. (Advanced Absentminded Attention Deficit Disorder)

This is how it goes:

I decide to wash the car; I start toward the garage and notice the mail on the table.

OK, I'm going to wash the car, but first I'm going to go through the mail.

I lay the car keys down on the desk, discard the junk mail, and notice the trashcan is full.

OK, I'll just put the bills on my desk and take the trashcan out, but since I'm going to be near the mailbox anyway, I'll pay these few bills first.

Now, where is my checkbook? Oops, there's only one check left. My extra checks are in my desk.

Oh, there's the coke I was drinking. I'm going to look for those checks. But first I have to put my coke further away from the computer, or maybe I'll pop it into the fridge to keep it cold for awhile.

I head towards the kitchen and my flowers catch my eye; they need some water.

I set the coke on the counter, and uh oh. There are my glasses. I was looking for them all morning. I'd better put them away first.

I fill a container with water and head for the flower pots.

(Continued on page 4)

DAWEG ICWEST 12 (con't)

(Continued from page 3)

Uh oh.....someone left the TV remote in the kitchen. We'll never think to look in the kitchen tonight when we want to watch television, so I'd better put it back in the family room where it belongs.

I splash some water into the pots and onto the floor, I throw the remote onto a soft cushion on the sofa and I head back down the hall trying to figure out what it was I was going to do?

End of the Day: The car isn't washed, the bills are unpaid, the coke is sitting on the kitchen counter, the flowers are half-watered, the checkbook still only has one check in it and I can't seem to find my car keys.

When I try to figure out how come nothing got done today, I'm baffled because I KNOW I WAS BUSY ALL DAY LONG!!!!

I realize this is a serious condition and I'll get help, but first I think I'll check my email.....

Author Forgotten



(Continued from page 3)

voice

- Develop an international base of financial support

DAWEG Action Plan

ICWES 12 was a rich and rewarding experience for BC delegates. It provided delegates with a unique opportunity to network with engineers and scientists from around the world, learn how other organizations are promoting engineering and science as a career to girls and young women, and discuss issues of retention with other professionals around the world. Nicole Kohnert, P.Eng., APEGBC Councillor, states, "I feel very grateful and inspired after experiencing the positive strengths and motivations of hundreds of women working toward the same goal. It gives me hope that change will happen as we continue to understand and resolve the issues."

ICWES also provided an opportunity to renew old friendships with delegates from across Canada and establish new friendships with engineers and scientists from around the world. Karen Savage, P.Eng., CCPE representative, reflects "A highlight for me was national delegates from Canada, the US, Britain, Bermuda, Nigeria, Congo, Kenya, and (sic) Newfoundland taking turns standing on the bed in the WISE hospitality suite to sing their national anthems."



*Life is not measured by the number of breaths we take,
but by the moments that take our breath away.*



DAWEG's plans for the future include:

- Liaising and sharing experiences with other similar organizations
- Introducing new programs such as WISE Alberta's mentor net.
- Reviewing APEGBC member programs that were developed by DAWEG to ensure that the original objectives are being met
- Continuing with school interaction programs to act as role models and promote awareness for girls on opportunities in science, technology, engineering and mathematics
- Continuing participation in government bodies and committees influencing policies in engineering and geoscience
- Continuing to enhance communication with and between members to promote networking opportunities
- Providing members with information on other organizations and resources.

To receive information from DAWEG, you can subscribe to

daweg-general@interchange.ubc.ca

Subscription instructions can be obtained from the DAWEG website at <http://batman.mech.ubc.ca/~daweg/>

You can contact us at our email address, DAWEG@mech.ubc.ca.

*We take approximately 23,000 breaths a day—16 breaths per minute. If you live till age 75, that's approx. 630 million breaths.
How many moments in your lifetime will take your breath away and make the breaths you take worth taking?*

DAWEG & Sustainability

by Christy Love, E.I.T.
—APEGBC Sustainability Research Engineer

Notes from the Sustainability Committee of APEGBC:

The Sustainability Committee publishes a quarterly newsletter. The December 2002 issue can be downloaded from www.sustainability.ca. The next issue, due out in March, will focus on Transportation. If you'd like to subscribe to this newsletter, please send an email to info@sustainability.ca or call Christy Love, E.I.T., at (604) 412-4868.

Earn 7 hours of PD by attending "Trends in Smart Building Design", a one-day seminar on green building design, LEED™ and EcoSmart™ concrete being held on February 28 in Richmond. For more information and to register, visit APEGBC's website or link directly to: www.apeg.bc.ca/prodev/events/smart_building.html

Did you know...?

- About 40% of the energy consumed in North America goes into buildings
- A recent in-depth pre-design study concluded that a typical market office building would consume about 5 times as much energy per capita as a typical household. On the other end of the spectrum, the ultimate green office building (referred to as the "Living Building") would produce net energy.

- APEGBC is a member of the US Green Building Council (USGBC) and recommends LEED™ as the preferred method of environmental building assessment (to learn more about the LEED™ building assessment tool, visit www.usgbc.org).
- The City of Calgary is on its way to mandating LEED™ Silver on all new public buildings. The City of Vancouver is piloting LEED™ on its new city works yard and may head in the same direction as Calgary. The City of Seattle already requires LEED™ Silver on all new city-financed buildings and major remodels.
- 40% of all new LEED™ projects are from the private sector.
- Sunpeaks, BC, is the first municipality in North America to mandate water-efficient dual-flush toilets.
- A LEED™ Intermediate training workshop is being held in Vancouver February 13th. Information and registration can be found at www.usgbc.org/LEED/training_workshop_main.asp. The last two workshops were sold out, so register early!

Christy Love, EIT, is the Sustainability Researcher/Engineer for APEGBC. If you have any questions, comments, or ideas, please feel free to contact her via email: clove@apeg.bc.ca or phone: (604) 412-4868.

"Men are most to believe, what they least understand."

Michel Eyquem de Montaigne, 1533-1592



Sustainability—there is so much that YOU CAN do!!

Understanding Engineers

"Normal" people believe that if it ain't broke, don't fix it. Engineers believe that if it ain't broke, it doesn't have enough features yet."

"Better to suffer than to die, that is mankind's motto."

Jean de la Fontaine, 1621-1695

DAWEG & SCWIST

The following event is being organized by the Society for Canadian Women in Science and Technology (SCWIST) and DAWEG members are invited to join.

CN IMAX at Canada Place - SOS PLANET

SOS PLANET 3D is a ground breaking documentary that raises some of the crucial environmental issues of our time while taking a serious look at the role of the mass media in the campaign to protect our planet. Aimed at audiences of all ages, SOS PLANET will combine live-action footage, digital effects, and computer-generated sequences in a truly immersive experience that only the IMAX screen can deliver.

Tuesday February 25th, 7:30pm - 9:00pm

Cost - Adults \$9.00, Seniors \$8.00.

IMAX event registration can be done via the SCWIST website at: <http://www.harbour.sfu.ca/scwist/recent.html>.

XX Evening 2003 at Science World

SCWIST (Society for Canadian Women in Science and Technology) invites women studying science to a networking evening at Science World on Monday March 3rd 2003.

Could you be a Wonder Woman for XX Evening 2003?

XX Evening is a lively networking evening run by SCWIST and held at Science World. We invite women in undergraduate science, technology, and engineering courses, as well as a few senior high school students, to come to Science World to meet women with careers in science and technology (That could include you!). There's a panel discussion, and a chance to network informally, pizza and pop for supper, and a fabulous Omnimax movie.

If you'd like to share some insights into your work with young women, this is an easy, fun, and rewarding way to do it. All you have to do is tell the assembled crowd (in one sentence) what you do for a living, and then be available to chat one-on-one with the students.

If interested in participating, send an e-mail to seix@scienceworld.bc.ca.

SCWIST invites all Wonder Women working in industry, women who are using their science skills in unusual ways (banking, technical writing, ??), women who have changed career streams, and women who have immigrated to Canada from afar and found success here. The greater the variety of stories, the more inspiring the evening seems to be.

Find out how amazing women are making careers in science and technology.

5:15 Registration. Please arrive by 5:30 PM. For security reasons, no late-comers will be admitted.

5:45 Panel discussion. Hear real success stories and get some good advice.

7:00 Refreshments and Networking. Chat with potential mentors.

8:30 Omnimax film Shackleton's Antarctic Adventure. Door prizes!!

The \$10 entrance fee covers the refreshments and the film.

You must preregister :
Call Science World at 604-443-7552
Or email sisinfo@scienceworld.bc.ca

This event is presented by SCWIST in association with Scientists and Innovators in the Schools and Science World.

Understanding Engineers

To the optimist, the glass is half full.

To the pessimist, the glass is half empty.

To the engineer, the glass is twice as big as it needs to be.

(Understanding Engineers was submitted by Gwyneth Roodnick, P.Eng.)

"There is nothing new except that which is forgotten."

Anonymous

"The tragedy of life is not that we die, but what dies inside a man when he lives."

Anonymous

"Since you control your thoughts, you are only as happy as you make up your mind to be."

Brian Tracy

"The amount you earn at any time is a reflection of the value that others place upon your contribution."

Brian Tracy

An Interesting Book—The Birth of Modern Geology

by Sandy Cook, P.Eng.

"The Map that Changed the World" by Simon Winchester; published by Harper Collins, 2001.

Have you ever wondered how maps were drawn before the satellites, or how the "underworld" came to be tracked?

William Smith was the son of a blacksmith in England in the closing days of the 18th century. In a time of fairly unsophisticated religious beliefs, this canal digger started noticing that rocks were arranged in layers. He also discovered that he could see quite clearly that different fossils were found in

different layers.

Over years of wandering the countryside of England, collecting rocks and fossils, he was able to develop the first map displaying the geology of England. His map is noted to be a beautiful piece of work. It hangs today, under a curtain to protect it, at the Royal Geological Society and is more than eight feet high by six feet wide.

The tale demonstrates his inventiveness against a very strong class system and religious structure. Even for those of us without a geological background, it is an intriguing read.

DAWEG Volunteering Opportunities

MathCounts

submitted by Cathy Marr, P.Eng.

MathCounts is looking for approximately 32 APEGBC or ASTBC volunteers for the February 8 Lower Mainland Regional competitions at SFU. This is a fun event comprising 500 or so of the better math students in grades 8 & 9. Think of these kids as a large portion of the Engineering class of 2010 & 2011. Markers will have their noses to the grindstone for the morning and should be free to watch the after-

noon competition. This is also a networking opportunity to come out and meet APEGBC VP Bill Gillmartin and help him out with awarding prizes. If you would like to look at more information about MathCounts please go to <http://www.apeg.bc.ca/mathcounts>. If you wish to participate, please reply directly to John Morgan, P.Eng., Chair, Mathcounts BC 2002-2003 (telephone (604) 987-5142 or email, john_morgan@telus.net).



Friends are quiet angels who lift us to our feet when our wings have trouble remembering how to fly.

YWCA Mentoring

submitted by Cathy Mar, P.Eng.

Women Women in Science Needed to Volunteer as Mentors! The YWCA Women In Science Program looking for mentors.

Perhaps there was a woman in your past who motivated you. It may have been a researcher, an educator or entrepreneur. It may have been a neighbor, or the mother of a friend.

Imagine what it would have been like to spend quality time with that person, asking questions about her work life and finding out how you could pursue a similar path. It could have changed your life.

Mentors Needed. The YWCA Mentorship

Program works in partnership with schools in Vancouver, Langley and Coquitlam to offer girls in grade 11 and 12 a unique opportunity to explore careers through a one-to-one mentorship with a caring professional woman. Since 1991, the YWCA Mentorship Program has served more than 600 young women.

The mentoring relationship will introduce these girls to new career and life possibilities, and a wider experience beyond the classroom.

Making a Difference.

Mentorship has been proven to raise self-esteem, improve academic achievements and build lifelong skills. It also means having a trusted friend who cares about them and helps them achieve their fullest potential. For a few hours a month, you

can make that difference in a young woman's life!

The Commitment of a Mentor:

To meet with the mentee once a month from January to end of May. Meeting time, location and activities are to be scheduled by Mentor and Mentee.

Sign Up Today.

Our 2003 is already underway but there are still mentors needed. A match will be made once we have processed your application.

For more information or to get an application please contact: Janice Lee, YWCA Mentorship Program Coordinator
Tel: 604-895-5802
e-mail: jlee@ywcavan.org

Canadian Aeronautics and Space Institute (CASI)

Canadian Aeronautics and Space Institute (CASI) – Vancouver Branch – is proud to announce its next meeting, "Intelligent Decision Making in Avionics", presented by Dr. Roya Rahbari, E.I.T. (CASI Vancouver is the local branch of the Canadian Aeronautics and Space Institute. Please visit www.mech.ubc.ca/~casi for more information.)

Intelligent Decision Making in Avionics

Presenter: Roya Rahbari, Ph.D., E.I.T.

Location: UBC, CEME (Civil and Mechanical Engineering Building), Room 1202

Date and Time: January 28th, 6:00 PM. Snacks and light refreshments provided.

Abstract: Roya completed her PhD, in the area of intelligent control, from department of Mechanical Engineering at UBC, in

2001. She continued her research at Flight Research Laboratory (FRL) of Institute of Aerospace Research (IAR), at National Research Council of Canada, as an NSERC Visiting Post Doctoral Fellow. This talk is aiming at introducing an on-going research in Flight Research Laboratory (FRL) of Institute of Aerospace Research (IAR), at National Research Council of Canada. This presentation will focus on design and development of an expert system for a low cost GPS/INS Integrated Navigation System that has improved performance.

Speaker Biography: Roya is currently a Research Officer with Innovation Centre in Vancouver. She has been CASI Vancouver Branch, executive member during the period 1999-2001 and is currently IEEE Vancouver Section, Chair of Industry Application Society. Roya is also a DAWEG Executive Committee member!!

DIVISION FOR THE
ADVANCEMENT OF WOMEN IN
ENGINEERING AND GEOSCIENCE

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DAWEG Strategic Plan

Vision Statement: To make Engineering and Geoscience Appealing, Rewarding, and Equitable.

Mission: To advise our profession on issues which impact on women in Engineering and Geoscience.

Core Values: Professionalism & Equity & Inclusiveness

See DAWEG website for more information.

COMMENTS AND IDEAS WELCOME!

Are you from the Interior of the province? Do you know many women in engineering or geophysics?

Please put your thoughts together as to how we might gain value from such an organization as DAWEG. Those from the lower mainland have Wine and Cheese get-togethers, fun runs, etc. These are not particularly practical for the vast distances we are dealing with. It might be useful to build a database of experiences, etc.

ANY IDEAS WOULD BE GREATLY APPRECIATED.

Perhaps there some potential members if we can show value.

Contact me at: cookeng2002@yahoo.com or Sandy Cook, P.O Box 3064, Vernon, B.C. V1B 3M1

C.R.Sandy Cook, P.Eng.

8th ANNUAL

Engineering Feets Run/Walk



what 10 km run / 5km walk
where stanley park – lumberman's arch
when sunday 2 march 2003
why celebrate national engineering week
registration running room
103-679 denman street
604.684.9771
or any other running room location
or visit
www.mech.ubc.ca/~daweg/funRun2003
or email
dawegfunrun@hotmail.com

The Fun Run Committee is looking for volunteers to help with all aspects of the fun run. If you would like to volunteer, please contact us at dawegfunrun@hotmail.com



Division for the Advancement of Women in Engineering and Geoscience