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1. Editor's Note

Dear colleagues,

This newsletter summarizes recent contributions I have received.

The goal of this newsletter is to integrate more and more women in control theory/applications development and to keep everybody posted on events, so if you come across interesting articles, useful information on web, that you think might be useful for our community, please feel free to contribute. As well please don't forget about job openings in your schools, companies, new books, journals, software releases, conferences, workshops, etc. Just drop me a line following my references below:

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2. Opportunities for women, Contributed by WiC Chair Anna-Maria Perdon

Dear Colleagues,

The WiC luncheon meeting at the ACC'03 in Anchorage has been a success: 31 women stayed and 10 others passed by and could not be the whole time with us, since they were attending others meetings or the workshop organized by Bozenna for the high school teachers.

We had an interesting meeting and had a few things to celebrate:

- Claire Tomlin is Donald P. Eckman award winner. Citation from ACC03 reads: for pioneering contributions to hybrid control systems and embedded software for real-time control, with applications to air traffic control, avionics and computational biology. Congratulations and best wishes!
- Cheryl Schrader is the President Elected of the Control System Society for the 2003.
- Felisa J. Vazquez-Abad has been nominated AE of the Transactions on Automatic Control. Congratulations Felisa!
- Nickie Menemenlis has been nominated AE of the Conference Editorial Board. Congratulations Nickie!
- Lucy Pao will be the Program Chair of the ACC2004. Congratulations Lucy!
- Elena Valcher is candidate for election to the Control Systems Society Board of Governors. If elected, the period of service would be January 1, 2004, through December 31, 2006. Give us your support!

The participants of the luncheon were mainly young researchers and PhD students, since many of the "older" members were attending other meetings and the special session. Anuradha Annaswamy, who was the Chair of the Program Committee, came to invite all of us for a "relaxed after dinner" in her "suite".

•Attention: the BoG has decided to go on the effort to augment the number of senior members. All of you who could apply for senior membership, please do. You can find all information at this address

<http://www.ieee.org/organizations/rab/md/smupdates.html>

If you need recommendation letters, or a nomination letter let us know. We must have the largest possible number of senior female members!!!!

•I invite all of you that are involved in the organization of IEEE and/or IFAC conferences or workshops in U.S.A. or abroad to organize a "going together" moment for the "Women in Control" . If a lunch is not possible, a "tea and pastries" or something similar. Ted Djaferis told me that some support could be provided. It could be a good occasion to meet "women in control" from different countries and possibly make them join the Society.

Looking forward to see you all in Mauii, all the best

Annamaria

3. WiC Statistics, Contributed by Dawn Tilbury

Hello, everyone. I wanted to update you on the status of the Women-in-Control Mailing list. The list currently has 195 members. If you have an announcement to send to the list, you can address your email to women-in-control@umich.edu and it will automatically be forwarded to everybody. The following email addresses have at least five bounced messages, and have been removed from the list. If you know any of these people, please forward this message to them and ask them to email me if they want to get back on the list.

akw@appsig.com
amb@dtro.e-technik.th-darmstadt.de
ann.reimers@usa.alcatel.com
bars@bme-at.aut.bme.hu
betty@ocean.ie.u-ryukyu.ac.jp
eberdem@comcast.net
ferrara@dist.unige.it
jacket98@hotmail.com
marit.paulsen@inko.no
martita@nr.titech.ac.jp
meera@eecs.umich.edu
michalsk@halina.mrcim.mcgill.edu
nmilica@europa.elfak.ni.ac.yu
rmahajan@kirk.ecs.umass.edu
wada@mecha.osakafu-u.ac.jp
yufeng@damek.kth.se

A breakdown of the members by domain is as follows. After the US, the most popular countries for "women in control" are Canada with 12 and Italy with 9.

1 ar Argentina
1 at Austria
1 au Australia
2 by Belarus
12 ca Canada
1 ch Switzerland
3 cn China
27 com Commercial
2 de Germany
85 edu Educational
1 ee Estonia
1 fi Finland
6 fr France
6 gov US Government

1 hu Hungary
1 il Israel
1 in India
1 is Iceland
9 it Italy
1 jp Japan
1 mil US Military
3 mx Mexico
1 net Networks
3 nl Netherlands
2 no Norway
5 org Organizations
1 pl Poland
1 ru Russia
3 se Sweden
1 sk Slovakia
3 tr Turkey
6 uk United Kingdom
2 za South Africa

I also got some historical data on the list. Based on my sporadic record keeping, here are the numbers of women on the mailing list:

members Date
130 Nov. 1996
150 Jan. 1998 (approx.)
173 May 1999
153 Aug. 1999
231 May 2000
172 Feb. 2001
186 Nov. 2001
190 May 2002
195 Apr. 2003

Also, if your email address is changing, be sure to let me know. My email address is women-in-control-request@umich.edu or tilbury@umich.edu.

Dawn Tilbury

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4. Call for volunteers for WiC mail list coordinator and newsletter editor

WiC is looking for volunteers for mail list coordinator and newsletter editor.

Dawn Tilbury has been serving in this position since 1995 and maintaining a sporadic record of WiC membership as you could see from the above provided statistics. Dawn is willing to resign from this position. Nominations should be directed to tilbury@umich.edu.

I have been serving in this position since June 2000. Nominations should be directed to

naira.hovakimyan@ae.gatech.edu.

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5. Invitation to the Workshop on Women of Applied Mathematics: Research and Leadership,
Contributed by Bozenna Pasik- Duncan

A workshop on Women of Applied Mathematics: Research and Leadership will be held October 8-10, 2003 at the University of Maryland at College Park. The workshop, consisting of research symposia and career development panel discussions, will provide a technical and professional forum for ten senior women and twenty-five early-career women (approx. 5-12 years past the Ph.D.) in applied mathematics. The workshop has two objectives: To provide advice and guidance to women who are a few years past the postdoctoral stage and are now facing new challenges as they transition to positions beyond entry-level. To provide networking among applied mathematicians who have become, or are striving to become, leaders in their fields. We are soliciting applications from early-career women in applied mathematics to attend the workshop. Participants will receive travel expenses. After the workshop, early-career participants are expected to lead an activity promoting women in mathematics and submit a report detailing that activity. Early-career is defined as several years past the postdoctoral stage, at the point where one is nearing or just past promotion and facing an increase in leadership responsibilities (e.g., leading research teams, being PI or co-PI on large proposals, and/or pursuing opportunities in management or administration). Roughly speaking, applicants in this category would be 5-12 years past the Ph.D. Application instructions are available on the web site listed below, and applications received by July 1, 2003 will receive full consideration. Web site: <http://csmr.ca.sandia.gov/~tgkolda/workshop2003/>

This workshop is organized by Dianne P. O'Leary (University of Maryland) and Tamara G. Kolda (Sandia National Labs). (Pending) Funding has been generously provided by the Mathematical, Information, and Computational Sciences (MICS) program in the Office of Science at the U.S. Department of Energy. The Computer Science Department of the University of Maryland at College Park will provide facilities for this workshop. Please address any questions to Tamara Kolda (tgkolda@sandia.gov) or Dianne O'Leary (oleary@cs.umd.edu).

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6. The Second NSF Workshop for High School Teachers of Math and Science, Contributed by Bozenna Pasik Duncan

Big thanks to all of you who attended or just stopped by the Workshop on June 4. Thanks for showing teachers important support.

Big thanks to Cheryl Schrader for finding time in her very busy schedule for warm, nice, and important welcome to teachers.

The Workshop was held at ACC on June 4, and had the technical sponsorship of the IEEE Control Systems Society and the American Control Council

The purpose of that workshop was to enhance the cooperation among various control groups and high school teachers of mathematics and science throughout the United States, to give attention to control and systems ideas and technology, and to increase the general awareness of the importance of control and systems technology and its cross-disciplinary nature among high school teachers and students.

It has been expected that teachers will take to their classrooms the ideas for research projects for

theirs students. It is expected that teachers will generate a strong interest in research among their students. They will built an important network with control researchers. They will learn how to integrate research into teaching. Finally they will get the information about resources for research projects and existing technology.

Presentations included:

The Power of Feedback , Theodore Djaferis, University of Massachusetts;

Mathematics in Epileptic Seizure Warning and Control, Mark Frei, Flint Hills Scientific, L.L.C.
Ivan Osorio, University of Kansas Medical Center;

Music, the Brain, and Complex Adaptive Systems: Using Musical Metapors and Models to Study Brain Functions,
Bryan Haaheim, University of Kansas, Deron McGee, University of Kansas;

Future Careers in Embedded Systems, Mechatronics, and Control ; Mark Spong, University of Illinois.

Comments after the Workshop:

The workshop was a big success, although there was tremendous difficulty organizing the workshop. The main problem was that local teachers were still finishing the term so only a few local teachers could come late in the afternoon.

* Summary of Teacher Comments on the Workshop:

1. Teachers loved the workshop
2. Teachers wanted more discussions.
3. Teachers wanted uniform hands-on activities during the afternoon too.
4. Need to show how to integrate control materials into the classroom. (Teachers like videos. The ACC Chicago workshop introductions and presentations are ready on Video CDs.)
5. There is a big need for supplementary control materials.
6. Need a National Teachers Data Base. (However, problem is that we have picked nationally recognized presidential award winners for excellence in teaching).

* The Technical Committee on Control Education (TCCE) Recommendations:

1. Need 2 page write-ups telling how to do it or how things work.
Write-ups needs to be very simple, at the high school level. Use Bernstein's student guide, "Integrating Signals, Systems, and Control in Grades K Through 12 (IEEE Control Systems Magazine, p. 10-12, April 2003.) and put copy of PDF on line from IEEE Xplorer.
2. Each TCCE member should write one 2 page paper, e.g. "Civics: Checks and Balances as a Feedback System", creating "Resources for K-12 to Incorporate into the Curriculum", perhaps producing a

booklet.

3. Create an article "Systems and Control for K-12" for Control Systems Magazine. It is important to focus on systems, not just feedback and control.

4. Must be relevant to High Schools.

5. Bernstein invited submission of a report of CDC 2002 Las Vegas Workshop for High School Students with pictures to Control Systems Magazine.

6. Assemble a list of high school science projects, asking the control community for suggestions, say one paragraph in length each. For example, "How does a Seesaw Work?" (what is the function of asymmetric sides in particular?), "Relation of Swing Dynamics and Feedback", or "Refrigerator Temperature Control" (Use a digital thermometer with a probe that can be used with the door closed to measure temperature recovery after the door has been opened and then closed for a sample of times.)

7. Control Systems Magazine wants to do more for Education. For instance there is a new "Eye on Education" Column.

8. The TCCE will be developing material for "everybody in the world".

Other Comments:

The TCCE has established a good IFAC Connection with similar interest in control education.

Future TCCE activities

CDC03 Maui:

1. Workshop for High School Students underway.

2. Workshop for Women In Control in honor of Cheryl Schrader, CSS President. Poster session for new women PhDs. Panel discussion of Emerging Issues. (more detailed information in the next Newsletter)

Please join us in some or all projects on control education

and

Enjoy your summer! I am on the way to Greece for MED03 Conference in Rhodes. I hope to see some of you there!

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7. Report to the IEEE Technical Activities Board on IEEE Women in Engineering, Contributed by Cheryl Schrader

The Women in Engineering (WIE) Committee led and participated in numerous activities during 2002. Primary foci were on development of services for the WIE membership and the formation and support of Affinity Groups. Currently, we have twelve WIE Affinity Groups, including two student branch affinity groups and four more affinity group formations in progress. Committee members and the IEEE staff have worked to aid and motivate the formation of these groups. Web resources have been coordinated to facilitate the formation and recognition of these groups. The currently recognized groups are:

- WIE Central Texas
- WIE Coastal Los Angeles
- WIE Colombia - Student Branch Affinity Group
- WIE Eastern North Carolina
- WIE Kerala
- WIE Mid-Hudson
- WIE Santa Clara Valley
- WIE South Plains
- WIE Spain
- WIE Switzerland
- WIE Washington (Washington DC/Northern Virginia/Baltimore)
- WIE Michigan Tech University Student Branch Affinity Group

The membership of WIE has grown to over 7000 members with 45% from Regions 1-6 and 55% from Regions 7-10. The majority of the WIE members (65%) are student grade members (non-paying for WIE membership) and the remainder are higher grade members of IEEE. Thus, it is no surprise that 70% of the WIE members are under 30 years of age. In addition, 24% of the WIE members are males.

To serve the members of WIE, the IEEE staff worked with committee members to significantly upgrade the IEEE WIE web site, to place the IEEE Women in Engineering Directory on-line (which provides significant search enhancements and costs savings over the printed version), to provide an electronic newsletter four to six times per year, and to provide e-mail responses to various inquiries.

To explore service needs for the WIE members an electronic survey of members was made between August 2001 and March 2002. 464 responses were gathered. The IEEE Foundation supported the WIE efforts to analyze the surveys with funding for both software and analyst time. Results of the report were presented at the International Conference on Women in Engineering and Science in Ottawa Canada, July 2002.

The WIE Committee will continue to strive to support members in order to enhance gender representation and awareness for IEEE. Two forums were hosted at the 2002 IEEE Board Series:

February 2002 - Tempe, USA

Uncertainty, Statistics, and Quality: Including Women in Engineering

Dr. Mary R. Anderson-Rowland

June 2002 - Toronto, Canada

Leading with Courage in Tough Times

Carol Stephenson, President and CEO, Lucent Technologies, Canada

In addition, the committee co-hosted a reception for Women in Engineering at the IEEE APS Conference in Texas in July, where approximately 250 individuals attended the reception.

In 2003, the WIE Committee will again host forums. Scheduled forums are:

February 2003 IEEE Board Series, Dallas, USA

Topic and speaker to be announced

June 2003 Ohio, USA

Topic and speaker to be announced

At its October 2002 in-person meeting, the WIE Committee discussed ways to improve services to the WIE members and to fulfill the goals within the established scopes of interest of the WIEC. The WIEC identified four strategic/information areas. They are networking, mentoring, visibility and evaluations. Specifics about reaching these goals will be discussed at the Committee's meeting in February.

Cheryl B. Schrader

*TAB Representative to Women in Engineering
President, IEEE Control Systems Society*