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June 2011

In this Issue:

1. 1. From the Editor

- After having served WiC for over three years, Elena marked her “retirement” at the CDC2010. She will continue supporting WiC activities as an adviser. Elena has given WiC incredible contributions over past three years. I would like to take this opportunity to thank Elena on behalf of the WiC members.

- Sonja Glavaski has been selected to take the role of the Chair of WiC at the CDC2010. Big Congratulations to Sonja! I would like to borrow the newsletter to send my best wishes to Sonja on behalf of the WiC members.

  Sonja started looking at issues of updating the WiC website. This will need all the members’ support and contributions. Do please send any suggestions and ideas to Sonja or to me.

- This issue of Newsletter is published later than previously scheduled. This is mainly because I was transferred from the University of Birmingham to the University of Warwick this year, which has ended my ten years daily commuting life. The job transition made my life much busier than I thought for past few months. Please accept my apology for the delay.

2. ACC2011 - Women in Control Meeting

Contributed by Sonja Glavaski

For those who attend the ACC2011, San Francisco, you are welcome to attend:
Women in Control Meeting

Date and time: Wednesday, June 29 2011 at 6:00-7:00 p.m.
Venue: To be announced,
There will be finger food served.

3. 3. Congratulations to Bozenna Pasik-Duncan on her recent award!
Contributed by Sonja Glavaski

Hello WIEC,

Congratulations to Bozenna Pasik-Duncan on her recent award!

Mathematics professor honored with Steeples Service to Kansas Award
http://www.news.ku.edu/2011/june/2/steeplesaward.shtml

LAWRENCE — A University of Kansas mathematics professor whose outreach efforts have affected thousands of students in Kansas is the 2011 recipient of the Steeples Service to Kansas Award.

Bozenna Pasik-Duncan was honored for her accomplishments at the College of Liberal Arts and Sciences graduate recognition ceremony May 22.

Don Steeples, the Dean A. McGee Distinguished Professor of Applied Geophysics, and his wife, Tammy, established the award in 1997 to honor Don Steeples' parents, Wally and Marie Steeples, and to recognize outstanding service by KU faculty to other Kansans. The award provides recipients with $1,000 and an additional $1,000 base adjustment to their salaries.

Thousands of students in grades K-12 have benefited from mathematics classes, workshops and competitions established by Pasik-Duncan.

In 1994, she started teaching mathematics classes four times a week in a Lawrence elementary school on top of her regular teaching load at KU. In just two years, the students won 17 awards at Kansas Regional Math Contests.

She has since expanded her contributions. She has organized and implemented Mathematics Awareness Month at KU for 17 years, which has received accolades from the governor and the Lawrence City Council. The mathematics competitions that are part of this program have attracted more than 1,000 students from about 90 Kansas schools in kindergarten through 12th grade in the past five years alone.

She has also established a partnership in mathematics education between local elementary schools and KU and an annual mathematics workshop for 5th and 6th graders in Lawrence and participates in about three workshops a year for high school teachers of mathematics and science in the United States and abroad.

Pasik-Duncan has been a faculty member in the Department of Mathematics since 1984. She has been honored with several of KU's most prestigious accolades, including the W.T. Kemper Fellowship for Teaching Excellence; the Frank B. Morrison Award for distinguished teaching; induction into the KU Women's Hall of Fame; and the distinction of being the first mathematics professor to receive the HOPE teaching award since it was established in 1959.

Funds for the Steeples award are managed by KU Endowment, the independent, nonprofit organization serving as the official fundraising and fund-management for KU. Founded in 1891, KU Endowment was the first foundation of its kind at a U.S. public university.

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4. 4. Letter from Bozenna Pasik-Duncan

Dear Friends,

Let me share with you my recent joy and pride coming from receiving one of the most meaningful recognitions, recognition for the service to the people of the state of Kansas.

I decided to share with you my Personal Statement provided for the Award and my Thank You Note written to Don Steeples, the founder of the award with his response. I thought that you might find them interesting. There is my word of wisdom in them for you.

I would also like to invite you to the Special Education Session at the ACC' 2011, see the announcement.

Enjoy the summer, and see you at the ACC in San Francisco, or at another conference this summer.

Bozenna

Letter to Don, June 1, 2011

Dear Don,

I cannot find even Polish words to express my gratitude to you and your wife, Tammy for establishing the Steeples Service to Kansas Award. This award became the most meaningful to me among all I have received in my 40 year academic career here, in Kansas, and there, in Poland. I left Poland but Poland never left me. I used Polish books to teach math and Polish culture to Lawrence students when I started the outreach program, and I have been teaching Polish in my KU math classes, giving extra credit problems written in Polish, but also giving KU students the keys to my empty apartment in the center of Warsaw, so they can practice their Polish ... My career talk is entitled: "From a Polish Space to the Land of Oz," with a Polish space being a mathematical object and the Land of Oz being a magic place. By expressing my gratitude to many people who were instrumental in this particular service to Kansas I would like to take the opportunity to demonstrate to you and your wife how large impact this award makes in my case, not only on KU and Kansas communities, but also on my professional communities as I have carried on the Kansas model for the outreach program to the mathematical and engineering organizations: IEEE Control Systems Society (CSS), American Automatic Control Council (AACC), International Federation of Automatic Control (IFAC), Society for Industrial and Applied Mathematics (SIAM) and Association for Women in Mathematics (AWM), to mention only a few. I am thankful to my daughter, Dominique, and my husband and colleague, Tyrone, for their beautiful understanding and support for my passion for community service. I am thankful to so many people at KU and in Lawrence. Among them are the present and past chairs of math department and present and past deans of the College of Liberal Arts for never saying no when I needed an extra support for outreach activities, and I am thankful to them for their always highly appreciated recognition for the importance of these activities and their generous support. I am also thankful to the directors of the Center For Teaching Excellence for learning the best teaching practices from their terrific programs and for their invaluable mentoring on many educational projects. I am thankful to friends in Topeka for taking the best care of proclamations by Governors of April as Mathematics Awareness Month every year, and to all Lawrence City Mayors who became most enthusiastic friends of and supporters for math and science. I am thankful to many of my KU colleagues and my former KU students who are currently researchers at other institutions for joining me on outreach activities at national and international conferences as presenters putting KU on the world map and for making thousands of middle and high school students aware of the interdisciplinary nature of mathematics, in particular control, a field that spans powerfully and beautifully STEM. I feel very fortunate and honored by being recognized and nominated by my math colleagues including my chairman. I am thankful to all math staff and faculty, in particular members of the outreach committee, and to many graduate and undergraduate, math and non- math students who have helped me to run this growing rapidly program. Looking at the third graders, the youngest participants in the competition, and then looking at their most beautifully presented solutions has been most rewarding. Receiving touching heart thank you notes from grateful parents has been a real joy.
I always think of those students as our future KU students and our best future. I believe that math can help to solve the most complex real world systems. "The unraveling complex systems" is the theme of the 2011 Mathematics Awareness Month, the month that is celebrated by the entire American and world mathematical community. Being selected as the recipient of this special award for my passion is really nice. You together with your wife established this award to honor your parents. I cannot stop thinking about my mother on this occasion. It is so unique that I received this very special recognition in the academic year in which my mother died.

I was supposed to fly to Poland today but I cancelled my trip last night ... I had that special feeling that Kansas with KU is the best place to be at today! Big thanks go to our Chancellor and Provost for making this place so special! And today, I have received so many congratulations notes from so many KU colleagues. This award made me feel like a true celebrity... a math teacher feels like a celebrity... this is something! I feel the happiest person on the earth today! Thank you for this terrific and powerful feeling! I will carry on this great feeling together with great message that "Kansas with KU is the best place on the earth" to many professional meetings at which I organize so many educational activities promoting STEM education this summer around this country and around the world, places such as: Washington DC, San Francisco, Italy, Poland, Germany, Greece, to mention only a very few of them...

I used to say: " KU students made me happy in this country." The Steeples Service to Kansas Award made me even happier! I will proudly carry on everywhere around the world this honour with your name attached to it. From the bottom of my heart thank you and your wife, Tammy for this honour.

With my gratitude and my best wishes to you and your wife for the best summer,
Bozenna

5. 5. The 9th European Workshop on Advanced Control and Diagnosis (ACD 2011)
Contributed by Elena Zattoni

The Invitation from the Workshop Organizers:

Dear Colleague,

I have the pleasure to invite you to take part in the 9th European Workshop on Advanced Control and Diagnosis (ACD 2011), which will be held between 17-18, November, 2011, at Budapest University of Technology and Economics, Budapest, Hungary. The website of the workshop: www.conferences.hu/acd2011.

The annual Workshop on Advanced Control and Diagnosis has been organized since 2003 to bring together academics and engineers from diverse fields of automation. The workshop provides opportunity for researchers and developers to present their recent developments in control and diagnosis techniques, to present practical applications or open problems. It is also a great opportunity for industrial partners to express their needs and priorities, and to review the current activities in the fields of advanced control and diagnosis.

Invited Plenary Speakers:
Philippe Goupil (Airbus Operations S.A.S.) Jan Maciej Koscielny (Warsaw University of Technolgy) Thomas Parisini (University of Trieste) András Varga (DLR – German Aerospace Center)

The conference welcomes papers of two types: regular papers, which report novel and significant contributions to the fields concerned by the workshop and work in progress papers, which present recent ideas, open problems and on-going works.

All submissions will be reviewed by (at least) 2 independent reviewers in terms of quality, impact and relevance to the Workshop. Notifications will be directed to the corresponding authors.
The final papers will be published in the Proceedings of ACD 2011.

Looking forward to seeing you in Budapest,

Jozsef Bokor: General Chair

Balint Vanek: IPC Chair

Tamas Peni: Program Chair

6. 6. **2011 ACC, San Francisco, CA, USA** - Special Invitation: You and your friends are invited to join me in this Special Education Session with Refreshments.

Contributed by Bozenna Pasik-Duncan
Special Education Session: Emerging Control Education Issues. Plain Talks on Systems & Control for a Wide Range of the Public (Revisited)
Organizer and Chair: Bozenna Pasik-Duncan, University of Kansas and Chair of CSS and AACC Technical Committees on Control Education
Sponsored by: CSS, AACC and University of Kansas
Wednesday, June 29, 4:30 PM - 6:00 PM, Imperial A

This Special Education Session will focus on multiple challenges and opportunities that are presented to young investigators preparing for careers in science and engineering and will address important control engineering education

issues of balancing math, science and technology in engineering education. Invited international control engineering scholars and educators from academia and industry will share a word of wisdom in addressing the following and other related questions: How do we integrate research and education? What we, scientists and educators, should do about cultivating student interest in science, math and engineering? Is it important for control engineering students to know math and science? Should control engineering education focus mostly on engineering? What kind of control engineering textbooks are popular among students? Do they need textbooks? This event follows a series of similar successful events and celebrates the 11th Anniversary of the Control Systems Society and American Automatic Control Council Outreach Program. This special Session will also revisit the project "**Plain Talk on Systems & Control for a Wide Range of the Public"** initiated at the 2006 CDC in New Orleans and discuss the follow up project. One of the major challenges for the controls community is to enhance its own public image and convey the essence and contribution of the field to outsiders; for this, coordinated effort has to take place. The purpose of this follow up project is to prepare "Plain Talk about the Power, Beauty and Excitement of the Cross Boundaries Nature of the Systems & Control for the Non-Control Engineering Audience." A sample of short talks given at various workshops for high school teachers and students as well as for a target audience of non-control engineering professionals and the general public will be presented and discussed.

7. 7. **2011 IFAC World Congress, Milan, Italy-** Special Invitation: You and your friends are invited to join me in this Special Education Session

Contributed by Bozenna Pasik-Duncan

Preparing Tomorrow's Scientists and Engineers for the Challenges of the 21st century

Thursday, September 1 hrs 16:00 – 18:00

Organizer and Moderator: Bozenna Pasik-Duncan (University of Kansas)

This Special Panel Session on Education will focus on multiple challenges and opportunities that are presented to young investigators preparing for careers in science and engineering and will address important control engineering education issues of balancing math, science and technology in engineering education. The main questions to be addressed are: How do we integrate research and education? What we, scientists and educators, should do about cultivating student interest in science, math and engineering? Is it important for control engineering students to know math and science? Should control engineering education focus mostly on engineering? What kind of control engineering textbooks are popular among students? Do they need textbooks? Should engineering education focus mostly on technology?

The expected output of this session are recommendations to the control community on how to integrate education with research and how to attract science and engineering students to the field of automatic control.

Panelists:

Karl Astrom (U. Lund), Siva Banda (AFRL, Wright-Patterson AFB), Tamer Basar (U. Illinois, Urbana), Antonio Bicchi (U. Pisa), Ruth Bars (Tech. U. Budapest), Christos Cassandras (Boston U.), Sebastian Dormido (U. Educacion Distancia), Alexander Fradkov (IPME, St. Petersburg), Graham Goodwin (U. Newcastle), Vladimir Havlena (Tech.l U. Prague), Stephen Kahne (IFAC), Jan Maciejowski (U. Cambridge), Iven Mareels (U. Melbourne), Roberto Tempo (CNR, Torino), Ljubo Vlacic (Griffith U.).

8. 8. Essay by Bozenna Pasik-Duncan

" Service to Kansas", Bozenna Pasik-Duncan, March 11, 2011

My mother's last words before she passed away last September were: "Remember you were born to be a teacher and you were born to help others" and Warsaw School of Economics Students' last words before I left for Kansas in 1984 were: "Why do you leave us? Kansas doesn't need you. Kansas has many great people. We need you in Poland." Through all those 27 years in Kansas I have been very conscious about helping the Kansas community. I came to Kansas to join my husband with the established record of community service as an university teacher and as a community math and science teacher. I started teaching at KU, I became a mother, and as a mother, I discovered quickly that I have the opportunity to help others who need help in math but also in learning about another culture. It was during my sabbatical, which I spent in Poland and France and placed my 4th grade daughter at Polish and French schools that I discovered that even she was considered an excellent student in Kansas, she was two grades behind in math. With my experience as a community teacher, I knew that I could help Kansas. I saw a real opportunity for a new joy in helping others and at the same time learning deeply about Kansas. I wanted to become a Kansan. With remarkable help and understanding, with a beautifully opened door by teachers and the principal to the local elementary school, I started my teaching as a volunteer with "a heavy accent". I developed a new course on "probability and algebra" using American, French and Polish books, a course that was focused not only on learning math but also on learning about different European cultures and languages. I was passionate about

my volunteering work. My students were engaged in improving my English and I was engaged in improving their ability of critical and logical thinking, ability of making connections, communicating better in math as well as in developing their curiosity. My students quickly became the winners of Kansas competitions on solving problems. Their successes became my true joy. Along with their parents and teachers, they became my new adopted family and friends. That was the time when I started to feel an important contributor to Kansas, and it was that time when I came to the conclusion that I deserved to be an American citizen. Those students prepared me for the exam for American Citizenship. I used their Social Studies books for preparation as they used my lecture notes for preparation for their exams in math. With that invaluable 4 year experience of teaching at the elementary school level, I was ready for the next bigger step of reaching more or even all Kansas students who need help. I started bringing students to KU. With the most beautiful help of the math department, I established what is called today "Mathematics Awareness Month/Outreach Activities," the program of which I am most proud and which serves as a role model all over the country and outside of the country putting Kansas prominently on the world map. With the help of so many; Senators, House Representatives, Mayors, faculty, present and former students, parents, friends, my dream came true. Through our math competitions, workshops and lectures open to public, we reached thousands of people who needed extra help and encouragement, so I felt needed in Kansas. My career talk at professional functions is entitled: "From a Polish Space to the Land of Oz". A Polish Space is a mathematical object and the Land of Oz is the land which made me feel at home and happy in this country and for these great feelings, I am most grateful and thankful to all Kansans.

9. 9. Job Opportunities

Contributed by Sonja Glavaski

9.1 Control Systems Research Engineer – Aerospace Control Architectures and Algorithms

Job Title: Control Systems Research Engineer – Aerospace Control Architectures and Algorithms

Job number 83068

Job Description

The Control Systems Group at United Technologies Research Center is seeking candidates with expertise in controls systems theory and implementation. The position requires demonstrated depth in design of advanced single and multi-vehicle aerospace systems (from requirements definition to embedded implementation and verification). The successful candidate will conduct research in design methodologies for aerospace systems including complex interactions of fluid, acoustic, thermal, combustion, and electric subsystems, as well as systems with distributed, networked embedded control. The candidate is expected to interact with a wide group of researchers in inter-disciplinary teams and to act as the technical leader in their area of expertise within these teams. Candidates with industrial experience in interpreting aerospace systems requirements and ability to formulate system architecture and algorithm concepts are encouraged to apply.

Education

The candidate should have an MS degree in aerospace, mechanical, electrical, or computer engineering with 4+ years of relevant experience after completion of the MS. Preferred candidates will have a PhD degree with 5+ years of relevant experience after completion of the Ph.D.

Experience

Analytical skills and experience with modeling and control design tools.

Technical expertise in the area of model-based, multivariable, nonlinear and hybrid systems control and estimation, optimization, diagnostics, and control verification.

Knowledge and experience in the area of decentralized control algorithms and architectures is desired.

Exceptional oral and written communication skills.

Adaptability and the ability to work in a teaming environment.

Demonstrated commitment to deliver results.

Track record of success in interactions with government funding agencies and proposal development is desirable.

US Citizenship or Permanent Residency strongly preferred.

9.2 Control Systems Research Engineer – High Performance Buildings and Energy Systems

Job Title: Control Systems Research Engineer – High Performance Buildings and Energy Systems

Job number 84009

Job Description
The Control Systems Group at United Technologies Research Center is seeking candidates with expertise in controls systems theory and implementation. The position requires demonstrated depth in model-based control design and real-time control systems. The successful candidate will conduct research in modeling, analysis, and control design for high performance buildings and energy systems. The candidate is expected to interact with a wide group of researchers in inter-disciplinary teams and to act as the technical leader in their area of expertise within these teams. Industrial experience in control of building, HVAC, refrigeration, fuel cell, or combustion systems is preferred.

Education
The candidate should have an MS degree in mechanical, electrical, or chemical, engineering with 4+ years of relevant experience after completion of the MS. Preferred candidates will have a PhD degree with 5+ years of relevant experience after completion of the Ph.D.

Experience
The position requires analytical skills and experience with programming and the development and use of computational modeling and control design tools.

The successful candidate will possess technical expertise in the area of model-based multivariable, nonlinear controls and estimation, dynamical and hybrid systems, optimization, diagnostics, and verification.

Knowledge and experience in the area of real-time embedded systems is highly desirable.

Exceptional oral and written communication skills.

Adaptability and the ability to work in a teaming environment.

Demonstrated commitment to deliver results.

Demonstrable success in interactions with government funding agencies and proposal development is desirable.