Mile High Spark

April 2014

Inside this issue:

Day Change!

Attend the next Denver IEEE ExCom meeting at:

DeVry University   1870 West 122nd Ave Room 121

Wednesday, April 9th   6:00 pm—8:30 pm

## Robotics Presentation - Metro State University of Denver
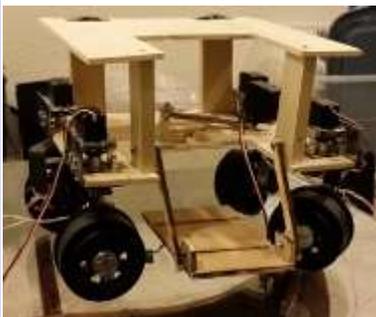
Do you still remember that long string of late night labs you pulled in your Senior Engineering Project or in the Microprocessor Lab you probably took some years back? Technology may swiftly change in our profession, but one thing that stays the same is the work and commitment required to learn, design and create something new.

The Metro Students Robotics Group is burning the midnight oil now as they prepare for the IEEE Region 5 Robotics Competition in Corpus Christi Texas, on Saturday April 5, 2014. Not only pulling late labs, but also contending with IEEE rules, procedures, playing fields, transportation to Texas for the competition - a huge endeavor!

The contest involves a challenging autonomous navigation of a cubic foot robot on an 8' x 8' obstacle course, simulating an ocean with waves and oil-rigs on fire, which the robot must find and extinguish using tools. The robot that can complete the most tasks with the fastest time will end up the victor.

The Event took place on Wednesday March 12, 2014 at Gamma 2 Robotics from 6:30 PM to 8:00 PM. Click here to find all the details.

As the only IEEE Student group from Colorado competing against 30 other schools, we can all rally behind them (donations optional, cheering required). Learn more about Gamma 2, the Metro Student Robotics design, and rekindle your passion for late nights in the lab!
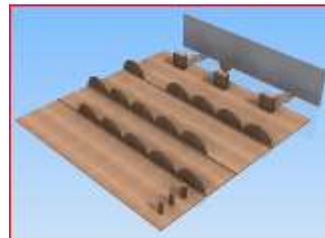
Hello from IEEE Denver Section Chair - Jennifer Kramer

I am excited to serve the Denver Section IEEE members this year as chair! We have an exciting year ahead of us and a special year in 2015, the Denver Section's 100-year anniversary! To properly plan for our 100-year anniversary and to continue to serve our members, we need your help. We need volunteers for several executive committee roles are well as for the 100-year anniversary planning committee. If you're interested in helping with either one, please email me. I look forward to hearing from you!

- Jennifer Kramer, chair@ieee-denver.org

Come to IEEE Computer Science Society Events

In the past year (2013), the IEEE Communication Society Denver Section joined forces with the Computer Society for revitalization. Thanks to the leadership of Tim Weil (the chair of IEEE Denver Section in 2013) and support from Pankaj Goyal in the Computer Society progress has been made. In 2014, the ComSoc will be led by Tim Weil as Chair, as well as the new Vice Chair Tim Groth and Treasurer Yimin Pang.

As Engineers we are interested in technological advancements and what any significant advancement will be. What's going to be the next big thing? In regards to communication, advancements occur by being able to communicate by different methods and by quicker and efficient means. Imagine the first forms of communications by sending messages on stage coach and how the advancement of telegraph could send a message so much faster and efficiently. Now we carry a personal device that supports not just one way to communicate but multiple. Networks are continually advancing as well lead by **the ever increasing power of computers that still seem to hold true to Moore's Law. Cloud Computing and Software Defined** networks are one such area that is now getting a lot of attention.   A goal of the communication society is to invite speakers to our meetings, to disseminate new knowledge impacting technology.

The last chapter meeting was held on March 17, 6:00 pm at Cable Labs to do a little brain storming on potential ideas for **other future meetings and take a tour.   There's much to be gained in attending these meetings in terms of knowledge, net-**working and perhaps some socializing too. 2014 will be a great year to grow the Communication Society but it needs your participation. In addition there are other open positions that would be nice to fill. So please get involved and spread the information. For more information contact Tim Groth at timg@ieee.org.   - Tim Groth, Yimin Pang

New US Patent and Trademark Office in Denver Will Spur Innovation and Job Creation Throughout Region

The USPTO's new Denver regional satellite office will be located in the Byron G. Rogers Federal Building, one block from the 18th & Stout Light Rail Station. The USPTO plans to open the Denver office in August, along with satellite offices in the Dallas-Fort Worth, Texas and Silicon Valley, California areas as part of efforts to support innovation and creativity, help protect and foster American innovation in the global marketplace, help businesses cut through red tape, and create new economic opportunities in each of the local communities.

> *"Denver is alive with innovation, with a highly educated workforce centered in a region populated with universities and R&D institutions,"* said Under Secretary of Commerce for Intellectual Property and Director of the USPTO David Kappos. *"The location of the new Denver satellite office will enable us to attract a top*-notch team of patent examiners and judges to improve our IP system, promote innovation, and create jobs in the Denver region and throughout *the Mountain West."*

The Denver satellite office will function as a hub of innovation and creativity, allowing the USPTO to serve regional entrepreneurs better than ever by getting them the patents they need so that they can attract capital, put their business plans into action, and help create more good-paying jobs.

Patents are a significant factor in private sector job creation. In fact, the U.S. Commerce Department issued a recent report finding that IP-intensive industries are the source – directly or indirectly – of 40 million jobs, contributing $5.06 trillion to the U.S. economy in 2010.

USPTO's Denver office will be a place for small businesses and entrepreneurs to learn how to navigate the patent process, meet with examiners, and access USPTO's comprehensive search databases. The office will also create jobs and boost the local economy. It will be modeled after the USPTO's first satellite office in Detroit, Michigan, which opened in July 2012.

The goal in Denver is to have 100 examiners and 20 administrative patent judges, as well as several support staff, on site by the end of the first year of operation.   Current vacancies listed on USA JOBS seek those with mechanical, electrical and computer backgrounds. However additional vacancies are scheduled to open throughout the fiscal year. To learn more about the basic job qualifications and duties, visit USAJobs.gov (keyword: USPTO) and check out the open positions for their Denver location. Follow the USPTO event page for the latest career fair updates and news or follow on Twitter.

—Valerie Schlecht

'Clouds Over the Rockies' – A Symposium Series Collaboration

Building on the success of our 2013 program, the combined IEEE Denver Computer/Communications Chapters and DeVry **University are collaborating on a symposium series entitled 'Clouds Over the Rockies'. The program will be a series of three** events **– that will be hosted at the DeVry (Westminster) campus as part of our 'Rocky Mountain IEEE**-DeVry Emerging Tech-**nologies' series (RIDE**-2014). The theme of the symposium will be the impact of Cloud Computing on our technical socie-ties (CS/COMSOC), education programs (DeVry) and the business sector here in the Denver area.

Business Impact of Cloud Computing, May 16th (1/2 day) — Business Forum

- Introduction to Cloud computing Concepts: basic technology and vocabulary, characteristics
- Benefits, drawbacks, market trends for small-medium enterprise (SME) companies and large corporations
- Review of typical service level agreements (SLA), identify missing/inadequate elements and mitigation steps

Cloud Computing Technology (an implementers forum) September 16th (full day) — Technical Forum

- Discussions on Cloud Data Centers, Storage Networks, Big Data
- Compare and Contrast of products and services including VMWare and Open Stack
- Communication Impact of Cloud Services (e.g. Software Defines Networks)

Emergent Technologies Conference (research developments) December 5th (full day) — Research Forum

- Extended Abstract Solicitation and Review
- Tutorials and Mimi-Workshops on developing cloud services, SaaS

Opportunities exist for symposium speakers, technical program committee members and local area technology firms to participate in this symposium se-ries. To learn more, contact us at info@ride-conf.org go to the website, or ex-plore this link.

NEW! IEEE Denver's Dine and Learn Series

Come join your fellow IEEE members and local engineers for a fun filled evening of appetizers, networking, and dinner, while we discover exciting new innovations in technology.   Once a month one of your local Denver IEEE Societies will host the event and bring in a unique speaker related to their field to present. This provides you, our members, with a unique opportunity to explore and learn about exciting new technologies being developed around you. Early on in the evening **you'll also have ample opportunity to mingle with your fellow engineers and colleagues delving into a broad range of** technical expertise.

Events will be held the 1st Tuesday of the month from 6:00pm to 9:00. We'll be providing plenty of delicious appetizers to accompany the networking hour, but dinner is on your own dime before we settle into the evening's presenta-tion. Watch for our upcoming e-mails with details about each event and locations.

We have an exciting set of speakers already lined. **Browse the list and don't hesitated to contact us with any questions.** We hope to see you there!

5/6/2014 - Modernizing the Greenhouse: Automation, Lighting, and Controls bring revolutionary improvements to this age-old system.	6/3/2014 - High Speed Serial Link Design
8/5/2014 - Hybrid Signal Processing and DSP Applications	10/7/2014 - EMI and Medical Instrumentation

Don't see a subject that interests you? No problem! Just send an e-**mail our way with what you're interested in and we'll** try to arrange it. Desired speakers and contacts in the field would help, but are by no means required.

Passing On the Torch

Where do Engineers come from?   Which is more important, nature, or nurture? "Born curious," is the single hallmark of an entire profession. Every infant is born curious, as the most basic survival trait. Learning, however, has been influenced by social pressures, where a bookish kid is often looked down upon, by too many cultures. (YouTube video) Economic pressures have added yet another block, in an obstacle course, to any youngster who is eager to learn, but whose family has no books. Even a free library card can be difficult to obtain, when the parent(s) have, at best, a series of temporary addresses. During the current recession, many local elementary schools have listed more than 10% of their students, **as "homeless."** Community Resources Inc. had been **started in 1972, by two mothers, whose kids weren't getting enough exposure to experts in technical fields.**

They invited me to volunteer, to expose 50 youngsters to some basics of Electricity and Magnetism. How do you engage two classes of twenty-five rambunctious third-graders? Not by simply talking at them. Instead of pushing a pencil, or half-**listening to another boring lecture, I provided them with "Hands-on Science" equipment.**

Each student (and each teacher) was presented with a ziplock bag of experimental items: soda straw, two balloons, new sock (for rubbing, to separate the charges, in static electricity experiments). They received: a new pencil, and two donut-shaped ceramic magnets (to illustrate magnetic levitation, as one magnet repelled the other magnet above it, on the vertically-held pencil). Each student received: four steel fender washers (to greatly magnify the edgewise-lifting force of each magnet, after assembling a washer on each side of each flat magnet).

A length of dental floss allowed students to suspend a magnet, to illustrate compass alignment with earth's magnetic field, and to test magnetism of a penny and paper clips. A steel nail was pre-knotted with a four feet of insulated wire. The longest part of the entire class was assisting each student, in winding about fifty turns of wire, leaving two three-inch leads (with ends pre-stripped). Students expressed a sense of accomplishment, in building something with their own hands, that would pick up paper clips, when correctly connected to an AA battery (provided).

With a spark-**coil, and a single AA cell, students (in pairs) experienced a "muscle-twitch," a small, safe shock, similar to Ben Franklin's public demonstrations from two centuries ago. Most of the students (and** teachers) asked me to repeat their zap.

At Greenlee Elementary School, where most of the kids were so poor, that they were provided free meals, many of the students hugged their new one-time Mentor, when they were told that they could keep their bag science experiments, forever. At a personal cost of $2 per student, their enthusiasm was reward enough. Did we make a few engineers?

-Richard Rew

More IEEE Events to Attend!

2014 6th Annual Green Technologies Conference, April 3, 2014:

- Click here for the conference website details. Held in Denver last year, 2013, the Sixth Annual 2014 GreenTech Conference is held in Corpus Christi, TX with the theme of S(olar) O(cean) W(ind) the Seeds of Our Future.

Assurance and Credibility in Sustainability, April 16, 2014:

- The Denver Professional Chapter of Net Impact is hosting presenter Todd Cort, Director of Sustainability Services at TÜV Rheinland of North America. RSVP here today! Event is held at CU Denver campus, Tivoli Student Union Building Room 640.

"How to Read S-parameters Like a Book " EMC Chapter Event, April 22, 2014:

- Hear Dr. Eric Bogatin, Singal Integrity Evangelist, Teledyne LeCroy speak on S-parameters. RSVP here!

4th Annual High Performance Computing Symposium, August 12-13, 2014:

- Dr. Thomas Hauser, Director of Research Computing at CU Boulder, and the Rocky Mountain Advanced Computing Consortium invites you to listen to featured speakers Irene Qualters, Acting Director of the Division of Advanced Cyber infrastructure (CISE/ACI) at the NSF, and Raj Hazra, Vice President and General Manager of High Performance Computing at Intel. Click here to learn more or enroll here as a sponsor or panelist/presenter.

Congratulations to IEEE Denver Newest Senior Members!

The following eight Denver Section affiliated IEEE members have reached the prestigious level of IEEE Senior Member. These new Senior Members have met the criteria as follows, defined in the IEEE Bylaw I-104.3. Congratulations in your nomination and approval!

- a candidate shall be an engineer, scientist, educator, technical executive or originator in IEEE-designated fields;

- candidates shall have been in professional practice for at least ten years;

- candidates shall have shown significant performance over a period of at least five of those years.

- In addition, candidates for Senior member grade must supply three references from current IEEE members holding the grade of Fellow, Senior member, or Honorary member.

Senior Member Name	Completion Date
Jonathan Berry	Dec 1, 2013
William Stoick	Nov 11, 2013
Jun Zhang	Nov 11, 2013
Craig Keller	Nov 11, 2013
Michael Carter	Nov 10, 2013
Tim Groth	Nov 10, 2013
Michael Benson	Nov 10, 2013
Donald Ravenscroft	Nov 9, 2013

To identify fellow members you wish to recruit for the elevation to senior membership or to apply yourself, consider reviewing the guidelines and upgrade requirements yourself! The application is found under Senior Member Application, Nomination and Reference Form on the IEEE website and requires three references from references from current IEEE members holding the grade of Fellow, Senior member, or Honorary member. Come to one of our events to inquire today!

IEEE Denver Section

Mission Statement
Enrich the professional and personal lives of the Rocky Mountain Region members, developing them into valued contributors to society through quality programs, continuing education, career development and community service; in collaboration with IEEE, industry, government and academia.

◆IEEE

The IEEE Denver Section is comprised of over 3600 engineers and technical professionals in the Denver - Boulder area.

http://www.ieee-denver.org