IEEE

GOLD*Rush*

June 2012

Featured in this issue

IEEE President-Elect Candidates Interviewed

Green IT and Sustainability

Engineering Research: Reaching Out from the Ivory Tower to the Disabled Community

Toronto GOLD Affinity Group Profile

Technology Design for Older Adults: the AAL Opportunities

GOLD
Graduates Of the Last Decade

Visit us online at
IEEE.org/GOLD

In this issue

June 2012

From the Editor
Stuart Bottom

Greetings, and thanks for reading another edition of GOLDRush! We have a full issue for you this quarter.

I'd like to acknowledge the hard work of our team This includes our two star peer-reviewers, Dr. Lisa Lazareck and Dr. Agusti Solanas, who selected the excellent articles for this edition. Our editorial assistants Joanna Oomen, Aisha Yousuf, and Kheng Swee Goh have been invaluable contributors. Our layout editor, Kenny Wong, did a heroic job on the layout of this (rather large!) edition. I also appreciate the continued support and guidance of Timothy Wong, our immediate past editor.

Finally, I'd like to welcome a new member to the GOLDRush team. Mario Milicevic has agreed to serve as our Business Development coordinator.

One thing I've discovered as a "fresh" editor-in-chief is that creating a quality publication takes time—a lot of it. Our authors and team have already risen to this challenge; at the same time, it's up to our team to continue streamlining our editorial process to get back on a rapid publication schedule. We have been hard at work on this and I appreciate your continued patience.

Please do not hesitate to contact me with questions or comments on LinkedIn, Twitter, or via email. With your help, we can keep GOLDRush great! ∎

Stuart Bottom
2012 Editor-in-Chief

Welcome from the 2012 MGA GOLD Chair
Eva Lang

Dear GOLD members around the globe,

one of today's popular catchphrases is "work-life balance." We spend hours in the office every day, then meet with our families, follow our hobbies at leisure time, or use technology like the TV or computer. But in our fast-paced lives, do we actually do a good job at bridging both worlds?

Working in the digital era—giving us tons of emails, meetings, projects every day—does not really help either. The number of stressed-out workers only seems to keep increasing. And, unfortunately, the more stress we encounter at work, the more stress we take home with us, so it becomes a sort of vicious circle.

There are dozens of guidebooks, videos, and articles on how to combat this stress. One of the best ways I have found is to take timeouts on a regular basis: listen to music, participate in sports, call up friends I haven't talked to in a while. Whatever it is that makes you happy, relaxed, and refreshed, go do it!

IEEE GOLD is working on showing you ways and means to help you balance your work and the rest of your life. Our webinars offer a discussion forum to engage with others on specific topics, and the Mentoring Connection links experienced professionals with those doing their first steps in their career. Just choose what you feel fits your needs best It's all out there, right at your fingertips!

Take your time (out), love what you do, and live the moment! ∎

Eva Lang
2012 IEEE MGA GOLD Committee Chair

Front cover photo credit: Timothy Wong

GOLDRush Timeline for 2012

August 24: September submission deadline

September 30: September edition released

November 16: December submission deadline

December 31: December edition released

IEEE **GOLD**Rush

Readers' Forum
Your questions and opinions

Pajama bottoms at a thesis defense?

Gloria See
Illinois, United States
IEEE Graduate Student member

I spent much of the last part of March into April dedicated to a high-intensity frenzy of finishing my MS thesis and preparing for my defense. This is a standard time of stress in any student's life; but what was unusual about my situation was that I did it remotely.

Because of a recent move, I hadn't defended my thesis before I needed to depart. Since measurements and data had already been collected, my advisor was gracious enough to send me off to my new locale and serve as the "boots on the ground" back at my university. It was already a regular practice for him to review students' drafts in shared Dropbox folders, so using that process long-distance was hardly a giant leap. He also informed me that it served the novel purpose of a passive-aggressive reminder for him to check my updates, since there is a pop up notification whenever I saved edits or added new versions to our shared folder.

Since face to face meetings were out, I found regular phone calls to be an apt substitute. I love having the record of my email conversations, but that certainly didn't provide the same impetus as knowing that 12:30 on Wednesday I would have to explain my progress. Each week, all the questions and concerns, updated graphs and edits were given a thorough run-down. Logistics were sorted out - who would be on the committee? Do I need to schedule a room? Wait, on which campus? Can everyone work with soft copies of the thesis or should I mail drafts back east? I think the calls were a key piece in keeping on schedule and still defending by the semester deadline.

We had some debate as to how the actual defense should be conducted. Whether or not I needed to book tickets and fly back was a bit of a concern, since it seemed (as is so often the case) that we were getting awfully close to looming deadlines. The final argument was "We are an electrical engineering department, and it is 2012. We should be able to do this electronically." And as it turns out, we have the technology.

The thesis defense itself was conducted via Skype. There were minor hitches (video freeze, anyone?) but the call clarity was solid and there was a live presentation of the slides at both ends. I projected them behind me and my advisor moved through them as I spoke on his end.

I found some of practice runs of the presentation involved as much debate of technical issues as they did the material of my presentation. I'm not sure if this took away from my presentation, but it made me very aware of how my presentation was experienced by all parties. It will certainly make me more attuned to borderless conference calls in the future.

I think it's a great opportunity to expand the use of technology for students and professors alike. Many universities have teleconference facilities already available and I would argue a thesis defense is a well-justified use of those resources.

Despite my fondness for nifty tech applications, I have to admit my favorite part is that I passed. ∎

Gloria See recently returned to student status as an IEEE member to pursue a PhD at University of Illinois Urbana Champaign. She is documenting her transition from student to professional to student at http://edgeffects.blogspot.com.

Providing patent support for universities and research centers

Dr. Miguel A. Salas Natera
Madrid, Spain
IEEE Graduate Student member

Patent advising and support for programs of universities and research centers is often an invaluable missing help. This process, in my opinion, should involve professors, researchers, young professionals and students with fresh and promising work.

Governments should support this kind of solid, science-based economic expansion during the current global financial crisis. The real thing is that the crisis affects all engineering fields and there is so much work to do. Creating a community effort focused on a sustainable growth trajectory is a valuable and challenging goal, and it might be possible when research and development centers have opportunities to pursue novel and interesting ideas abroad.

A local engineering community can improve quality of life by facilitating the development of affordable, appropriate, and sustainable ideas to solve the most pressing humanitarian challenges. Developing countries have found opportunities within the global crisis, and many of them are looking to solve basic matters in their social circumstances. Many countries have supported their financial situation with the development of a broad set of services, but forgotten to build up

Readers' Forum
Your questions and opinions

Providing patent support for universities and research centers

those ideas supported by public funding within government programs of R+D. So, why are we often investing in R+D without a program for near-term investment to make the effort profitable?

My question does not include science that requires a long period of research before implementation of practical results. It does apply to productive research investment: that which can be used for near-term growth, and in turn promotes the proliferation of multiple private players for the common good. The United States and the European Union are export markets for many countries, but currently growing economies are becoming more attractive as export markets as their economies grow and their domestic demand increases. Highly populated countries provide quite promising opportunities. While this is not a proposal for a solution, it is a reminder that we must make the most of brilliant ideas in these challenging times. ∎

The Next Step

Maxwell Wright
IEEE Graduate Student member

The first step: graduating from college, getting that first job, joining IEEE. Whatever that first step is, what is the second, and the third? As thought leaders, innovators, and managers, we are driven by a desire to change, to create, and to succeed. Are we driven to propel society into a new age of freedom? From a technological standpoint we have the means to create new products that drive constant communication, information retrieval, and knowledge sharing. We must continue that. But as we see freedom in apps that allow us to move when and where we wish, we are also bound by the means to get there, the power to move, the power to compute, the power to sustain our lifestyles, the power to grow.

Power, electrically speaking, is a finite resource in today's world. Just as in economics, there is a supply and a demand. Unfortunately, the supply in this case is not keeping pace with demand increases and we continue to see an ever increasing need to spin up more capacity. Power generation capacity is created through the building of nuclear and hydroelectric plants, as well as coal, diesel and natural gas burning generators.

So if we can build more plants then why is there an issue with capacity? The answer is a long one, and I would suggest you research the issues for yourself, but here is a high-level overview for each method of generation: Nuclear is very expensive and time-consuming to build and once it is built the capacity is static—it does not adapt well to fluctuations in demand. Hydroelectric is not available in many regions, and where it is available, it has already been tapped. Coal, diesel, and natural gas plants are all burning finite resources, some more expensive than others, and some aren't what you would call "clean."

Of all of the main options for generation capacity, nuclear is arguably the most likely to sustain. But let's ask ourselves; do we want a nuclear plant sitting in our backyard? If we are to be powered by nuclear then we have to be prepared to build them where we live. As we push plants further and further away, we increase the cost and decrease the reliability.

So what are we to do? Well, as thought leaders, innovators, and managers, I will leave that up to you. But allow me to throw some foundational ideas your way. First, let's think energy efficiency. A great idea, but one that I believe is only a gap-filling effort. Think about it—we continue to engineer more efficient appliances and electric utility companies are instituting demand-reduction programs to volunteer consumers. But let me ask you this; what is the net value of energy saved if the device is using 50% less power but now there are two devices running? We're talking about continued growth of our society, and greater access to these devices. We may consume less power per device, but the number of devices in our lives continues to increase.

Now, let's start to think like creators, problem solvers, and even risk-takers. Power generation is the key that unlocks the electricity demand conundrum. What if our electricity supply was unlimited? What if it was free? If we ask ourselves these questions we come up with some interesting answers. My father, a man who has spent his life providing electric power to our hometown, once posed this question to me: What if someone came up with a way to create power out of dumping sand into a machine or just simply created out of thin air?

Just think about it. What is the next step, and the one after? What will our legacy be? ∎

Maxwell Wright is a Smart Grid Project Manager and a member of the IEEE Power & Energy Society and IEEE Communications Society.

IEEE President-Elect Candidates

Hear from the two candidates for IEEE President-Elect 2013.

Dr. Roberto de Marca

Dr. Tariq S Durani

In this edition of GOLDRush, we present our annual interview of the IEEE President-Elect candidates. This year's candidates are Roberto De Marca and Tariq S Durani.

IEEE annual election ballots will be mailed to all eligible voting members on or before 1 August. All eligible voting members can also access their ballot electronically. For more information access: http://www.ieee.org/about/corporate/election/election_faq.html

Make your vote count!

IEEE President-Elect Candidates

Dr. Roberto de Marca

Background

Roberto was a Fulbright Scholar at the University of Southern California where he earned his PhD-EE. Since 1978 he has been on the faculty of the Catholic University, Rio de Janeiro, having held several leadership/administrative positions including Associate Academic VP. Dr. de Marca has extensive international experience with appointments in industry and academia in Europe, Asia and North-America. Twice he served as Scientific Consultant with AT&T Bell Laboratories.

As National Research Council Scientific Director, he authorized the startup money for the national research network paving the way to the widespread Internet use in Brazil. Dr. de Marca was a delegate to several ITU meetings where the wireless 3G standards were developed. In 2008-2010 he served on the presidential advisory board of the largest Brazilian R&D/Innovation funding agency.

Roberto was the Brazilian Telecommunications Society founding President and is a member of the Brazilian National Academy of Sciences and the National Academy of Engineering.

What prompted you to become an IEEE member and volunteer?

As with many other members, my motivation was a professor of mine (I was his teaching assistant)

who taught Physics but actually had a Ph.D. in EE. He kept several research journals on his desk

including the IEEE Proceedings. I curiously browsed the issues and later in my course also those of the IEEE Transactions on Communications. I was awed by the caliber and reputation of the authors and editors. The most distinguished names in my field were there. I decided then to join IEEE as a student member, 18 months before my graduation. As a young professional, I started attending IEEE conferences and enjoying an important IEEE benefit, networking with the leaders in my field. Through this networking I engaged into volunteer activities. This was about thirty years ago and it has become an integral and gratifying part of my career.

How do you see yourself positively affecting IEEE Young Professionals if you are elected?

I believe I can positively affect young professionals in two ways. The first one is leading by example. Help them understand the important characteristics of successful volunteers and professionals, such as, at the same time be patient but also persistent and bold to achieve his/her objectives, and how to benefit greatly from the experience of others. The second one is to work with the GOLD leadership to identify products and activities that must be established to address the career needs of young professionals worldwide, tailored according to regional differences, and including industry practitioners. In my opinion, there is a need to: create continuing education/training opportunities that facilitate career progress, including ones dedicated to soft skills related to behavior in the work environment; to facilitate access to IEEE leadership positions; and to establish mechanisms for information access at reasonable costs for young professionals.

My diverse professional experience that includes positions in academia, industry and government, as well as my diversified IEEE volunteer experience, where I made concrete contributions to every aspect of IEEE operations, provide a unique perspective to address young professional aspirations.

What are your hobbies and interests?

I was born and raised in Rio de Janeiro so naturally I like walking in the beach and swimming in the ocean. I like sports and throughout my life I have practiced several including rowing, judo, beach volleyball and of course, being Brazilian, soccer. I am also interested in art and I do collect

Dr. Roberto de Marca

it, often enjoying exhibits and visiting museums when I travel. However, the most time consuming and rewarding hobby I have is the volunteer activity in IEEE.

Do you have any words of advice for Young Professionals?

Our extremely competitive world requires very hard work from everyone, just being smart is not

enough. The knowledge acquired in school will not make a difference forever. Young professionals must be ready to engage in a lifelong learning process, and belonging to IEEE can help a lot in this challenge. Relevant problems today require solutions that are multidisciplinary in nature and they must be aware and prepared for this new reality. They should also use their skills to reach cost-effective and sustainable solutions to these problems. A teamwork approach is imperative and due to the globalized economy they must develop sensitivity to cultural differences. Last but definitely not least, professional ethics shall always take priority over personal ambitions. ∎

Roberto de Marca's campaign website can be accessed at

http://www.robertodemarca.org

IEEE **GOLD**Rush

IEEE President-Elect Candidates

Dr. Tariq S Durani

Background

Tariq Durrani's distinguished career includes several positions at University of Strathclyde UK; from Department Head to Deputy Principal with university-wide responsibilities for large-scale strategic developments. His research interests cover Communications, Signal Processing, and Technology Management. He has authored 350 publications; supervised 40 PhDs; and currently holds Visiting Appointments at Universities of Princeton, Southern California, Stirling (Scotland) and Chengdu (China).

He has been Vice President of the IEEE Educational Activities Board, and Past President IEEE Signal Processing Society and IEEE Engineering Management Society.

Tariq has held Directorships of eight organizations, including the Scottish Funding Council, and UK National Commission for UNESCO.

He has served as an Advisor to the Governments of UK, Portugal, Netherlands, UAE, US, and European Union. He is a Fellow in: the UK Royal Academy of Engineering, the Royal Society of Edinburgh; IET and IEEE. In 2003, Queen Elizabeth conferred on him the Order of the British Empire (OBE) 'for services to electronics research and higher education.'

What prompted you to become an IEEE member and volunteer?

I was attracted to the IEEE by its superb journals and Transaction papers, while I was a research student. As an IEEE member I could obtain the Transactions at minimal cost and was able to rapidly build up a library of my own. Those were the days before Xplore, when obtaining articles meant a long trudge to the library or a long wait for an inter-library loan.

As a research student I attended an IEEE Conference, where I met some of the pioneers of the Fast Fourier Transform. Meeting the pioneers engendered an interest in the then ASSP Society, and in volunteering to support the Society.

It is enormously gratifying to note that in later years those pioneers have received one of the highest accolades of the IEEE- the Jack Kilby Signal Processing Medal, that I helped establish when I was President of the IEEE Signal Processing Society.

How do you see yourself positively affecting IEEE Young Professionals if you are elected?

I lay great store in supporting the career aspirations of young professionals. In this context, if elected, I will seek to establish initiatives and vehicles that:

Offer opportunities for enhancing their skill base through effective continuing professional development, including employability skills and management skills, delivered through the IEEE e-learning Library.

Encourage, and seek an increase in, practitioner-driven, practitioner-oriented conferences, and promote job fairs at Conferences to improve employment opportunities.

Provide career support to *GOLD members* through a Virtual Network of Mentors.

Enhance life chances of student members by establishing mechanisms for advice on career choices, *by augmenting the role of Chapter leadership*.

Give consideration to a gradually escalating, multi-step, fee structure for members as they advance in their careers. This approach needs to be tested against robust financial models and would require an associated strong business case.

Promote Innovation and Entrepreneurship by establishing an *Innovation Academy* to support an IEEE global talent pipeline that turns innovative concepts and products into entrepreneurship.

What are your hobbies and interests?

I have lived in Scotland for over thirty years, and during these years have been imbued by a passion for the national game - Golf. Having said that, my preoccupation with professional

Dr. Tariq S Durani

activities has precluded my spending as much time as I would like on the fairways. However, more recently, I have found a compromise by visiting a golf range to practice my strokes.

Do you have any words of advice for Young Professionals?

Work hard, play hard. Keep your knowledge up-to-date by participating in professional development programs. Contribute to the activities of your local IEEE Section or Chapter. The IEEE offers immense opportunities for networking, and for enhancing your leadership skills that in turn will improve your career prospects. Consider participating in IEEE Programs such as EPICS - Engineering Projects in Community Service* - which will bring you into contact with local communities, local schools, and more importantly, give you an opportunity to play a part in humanitarian projects. In our profession, as in any other, organizations look for individuals who are technically competent, well motivated, well rounded, and who have potential for future leadership. Participation in IEEE activities gives you all these attributes, and more.

* EPICS is a Program run by the IEEE Educational Activities Board, significantly expanded during my term as Vice President of the IEEE Educational Activities Board. ∎

Tariq S Durani's campaign website can be accessed at

http://www.tariqdurrani.org/

IEEE GOLDRush

IEEE GOLD Community News
From around the world

IEEE GOLD at the Microsoft Windows 8 Student Technology Conference 2012

Andreas Neumeier—GOLD Coordinator IEEE Germany Section
Martin Stötzer—Student Branch Coordinator IEEE Germany Section

Microsoft organized their "Student Technology Conference" this year in Berlin, Germany. IEEE and the "Graduates of the Last Decade" Affinity Group supported the event as sponsors together with the Student Branches. The participation was made possible by Michael Schoen; a long-time individual contributor to IEEE GOLD, helping us to maintain a relationship with Microsoft Germany.

IEEE had a booth at the event, together with the "Gesellschaft für Informatik e.V.," a German organization partnering with the IEEE Computer Society.

The booth, run by Martin Stötzer, Student Branch Coordinator for the German Section, was well visited during the event and helped reached out to numerous students and other visitors. Overall the booth was considered a great success.

Beyond just sponsoring, GOLD was also played an active role in the event. Andreas Neumeier, GOLD Coordinator for the German Section, took part in the

(Top left) IEEE and GI e.V. booth (Top right) Dr. Lutz Lippert, Microsoft (Bottom right) Martin Stoetzer, Lutz Ziob, Andreas Neumeier (Bottom left) Audience at the "Windows 8 STC"

"Imagine Cup" software design competition as a member of the jury. Together with the General Manager for Microsoft Learning; Lutz Ziob, the Microsoft Academic Lead; Dr. Lars Lippert, a representative of "Audimax Medien" publishing house; Oliver Bialas, and Prof. Dr. Alfred Zimmermann from the "Gesellschaft für Informatik e.V." they reviewed the ideas and implementations for seven student projects.

The winning team, "Greenway – the better way" got ahead in the competition and won tickets to the "Imagine Cup" international finals, which will take place in Sydney, Australia, later this year. ∎

STEP Event on "Entrepreneurship as a Career Path"

Karthik K V and Prashant Venkatasubban
Andhra Pradesh, India

IEEE Hyderabad Section conducted a STEP program in Warangal on the 7th of April, 2012, which was attended by 50 students and young professionals. The objective of this program was to propagate GOLD activities to areas outside the city and familiarize student members (soon to be young professionals) with the opportunities and benefits of an IEEE membership at the onset of their professional career.

The program commenced with an introduction to the Hyderabad GOLD affinity group by Sabyasachi Ghosh, Chairman GOLD. During the talk, he described the challenges of transitioning from student life to a professional life and created an awareness of the various aspects of IEEE's support during this transition. He also spoke about the benefits of being a GOLD member and the subsequent value addition to one's professional career.

The main theme of this event, "Entrepreneurship as a Career Path" was addressed by Arun Vydianathan, an Entrepreneur from Ostrya Labs. Arun, with a wide exposure

to the field of IT, shared his experiences of working with various organizations and his career path progression toward entrepreneurship. He elucidated the benefits and challenges of starting your own company and spoke about work ethics in the professional world. He also enlightened the audience on how to become an entrepreneur, primarily encouraging students to grow professionally.

This discussion was followed by High Tea and a panel discussion thereafter, lead by Sabyasachi Ghosh, Arun Vydianathan, Professor Syed Musthak and Mithun Bhaskar. The panel engaged the audience with interesting topics for discussion making it more interactive and answered the queries of enthusiastic students regarding resume writing skills, startups as career options and other areas of entrepreneurship. The discussion also covered communication skills, honesty and punctuality at workplace and the essence of networking with professionals.

Towards the end, GOLD student volunteers shared their experiences of working with IEEE and how it con-

IEEE **GOLD**Rush

STEP Event on "Entrepreneurship as a Career Path"

tributed to their career growth and talked about various opportunities available to a GOLD member, followed by a recognition of outstanding IEEE volunteers from the student branches in Warangal.

The event was an opportunity for students and young professionals to network and interact with fellow members and professionals. Overall it was a great success, made possible with support from student branches of Warangal, NIT throughout the event. ∎

Top right: Volunteers, Bottom: Various shots from the day

Scientific Popular Weekend in Split, Croatia

Ana Katalinic—IEEE Croatia Section GOLD AG Chair
Damir Senic —IEEE Croatia Section Student Branch Split Chair

The first STEP event in Split, Croatia, organized by Student Branch Split and coordinated by IEEE Croatia Section GOLD Affinity Group, took place on 10th December 2011 at the University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture (FESB).

"Scientific Popular Weekend" brought several distinguished lecturers together, who shared their expertise and gave some views on science and its history.

The first (scientific) module, "How did we discover the Universe?" was covered by three lecturers.

Prof Nikola Godinovic gave a talk on the creation of the Universe, focusing on the most intriguing and challenging questions related to the mystery of what went on before the Big Bang and how we could explore it.

Prof Damir Lelas gave an introductory speech on the most fundamental questions in physics related to the Higgs boson, or the God particle, as a hypothetical massive elementary particle, and the large Hadron collider, the world's largest and highest-energy particle accelerator.

Afterwards, Prof Ivica Puljak, in a live video call from CERN, gave an exclusive insight into the capabilities of CERN's Large Hadron Collider, as well as some state-of-the-art activities undertaken at CERN.

Event participants

The second part of the event was reserved for two splendors of Croatian Science – Rudjer Boskovic and Nikola Tesla.

Rudjer Boskovic, a Jesuit physicist, astronomer and mathematician, philosopher and diplomat, and most notably, the proponent of the Atomic Theory, was presented in a very interesting talk on physics and philosophy given by Prof Dragan Poljak.

IEEE **GOLD***Rush*

Scientific Popular Weekend in Split, Croatia

Nikola Tesla, inventor and engineer, a genius and one of the most beautiful minds in the history of science, was presented in a lecture by Prof Zoran Blazevic.

"Scientific Paper Writing" was the last session of the event, conducted by guests from the University of Zagreb, Faculty of Electrical Engineering and Computing (FER). Ana Petric, Iva Bojic and Vedran Podobnik gave some basic information and guidelines for writing a high quality scientific paper, also sharing their personal experiences regarding the DOs and DON'Ts of writing one.

Considering this was the first event of its kind, STEP was a huge success: it gathered 62 attendees in total (24 IEEE members and 38 non-members) and generated a lot of interest among the audience about IEEE and its activities. We hope to continue in the same successful manner in the future. ∎

In the lecture hall

Region 8 SBC in Madrid
Rafal Sliz—Region 8 GOLD Committee

Every two years Region 8 hosts an active students and GOLD members Congress where all of them network, improve their professional skills, have fun and learn about volunteering opportunities in IEEE. This year the event will be held 25th – 29th of July in hot Madrid. The registration for this year is already closed and almost 200 students, GOLD members, staff members, invited guests and speakers will be spending time together in order to share knowledge and boost their skills. The Region 8 GOLD Committee, together with local organizers, is really looking forward to hosting this event and working hard to make this event as good as the 2010 SBC in Leuven, if not better. The event will be divided into workshops and a plenary session. There will be separate workshops for students and GOLD members and the two groups will come together during the plenary session to learn about and discuss issues concerning both groups. In addition, the professional activities and membership development committees have prepared workshops focused on issues facing young professionals and how they can be successful. The non-technical workshops are prepared for members interested in improving their soft skills like leadership and management.

Local organizers have arranged for a variety of speeches and workshops to be given by academic and industrial representatives. These speeches and workshops will cover many different topics to address the interests of a very diverse audience. Finally, SBC will not be complete without a great social program. Besides the obligatory reception

and gala dinner our Spanish friends have organized a multicultural dinner where all participants will have a chance to present their nation's clothes, habits, delicacies and nectars. In addition, the venue for one of the evenings will be San Lorenzo de El Escorial where participants will get to try out the delicious Spanish paella dish.

The upcoming SBC 2012 is a result of a tremendous work done by the local organizing committee, R8 Student Activities Committee and R8 GOLD Committee. Moreover, many thanks to the Region 8 governors for their support, patience and understanding of all the crazy ideas. Finally, all participants should remember to frequently check the SBC website (www.sbcmadrid.es) for updates and bring their passports, visas and most importantly, a good mood and enthusiasm! ∎

GOLD excursion to Google Munich
Andreas Neumeier—GOLD Coordinator German Section

On Wednesday 2nd of May 2012, IEEE GOLD organized a guided tour through the Google Germany offices in Munich. The tour was open for local GOLD members, Student Branch members and members of the VDE Germany. A Google-Developer showed the workspaces and laboratories to the participants. Focus of the tour was to demonstrate how the global cooperation works. Participants had the opportunity to get some answers in a Q&A session afterwards.

GOLD Members collaborate to improve the Governance in Tunisia and enjoy Google Open Day

Habib M. Kammoun—GOLD Tunisia AG chair

Given the necessity of good governance in Tunisia after the revolution, the IEEE Tunisia GOLD Affinity Group (AG) successfully organized the Spring School on Governance (SSG 2012), from 18 to 21 March 2012 in Sousse. This event was co-organized in cooperation with the IEEE Sfax Subsection, the Research Groups on Intelligent Machines (REGIM Lab.), and the Association of Sustainable Innovation in Tunisia. The school was sponsored by the German Academic Exchange Service (DAAD).

Group photo of SSG's Participants

Over 50 IEEE members (graduate students and young professional members) participated in the 4-day school to improve their knowledge and skills for better governance. The important topics in governance are consistent management, cohesive policies, guidance, processes and decision-rights for a given area of responsibility.

Anastasia Leng discussing with some participants

The school was a good opportunity to share skills, methods and insights; to exchange ideas, experiences and thoughts; and to create value by implementing new ideas. A series of high level plenary talks were presented and the participants were given an opportunity to discuss the needs for governance during the current and future phases of the country with experts. Some of the topics covered include:

- "An Introduction to Governance" and "Governance of Research", by Adel M. Alimi (Univ. Sfax, Tunisia)
- "Role of Governance in the Economic and Scientific Progress", by Volker Märgner (TU BS, Germany)
- "E-Governance", by Haikal El Abed (TU BS, Germany)
- "Governance of Technopols", by Najib Abida (Sfax ICT Technopark, Tunisia)
- "Good Governance", by Habib M. Kammoun (Univ. Gafsa, Tunisia)
- "Local Governance", by Hichem Elloumi (Municipality of Sfax, Tunisia)
- "Governance : The Power Of Vision" and "Governance & Paradigm1", by Nadhem Bardaa (N Consulting, Tunisia)

More details are available on the school website: http://ssg.regim.org/

Shortly after the school, the Tunisia GOLD AG organized the Google Open Day on May 4, 2012. This event was hosted at the Sfax ICT Technopark in cooperation with the Sfax Google Technology User Group (GTUG) and the Sfax ICT Technopark. The goal of the day was for GOLD members who are managers in startups to meet Google managers to learn about improving their productive abilities and to make good careers choices.

In the morning, Ahmad Hamzawi (Head of New Business Development in MENA , Central Asia & Turkey), Anastasia Leng (New Business Development manager in EMEA), and Andy Dwonch (Sr. Director of Social Innovations at Mercy Corps) were invited to visit the Sfax ICT Technopark components, especially the incubator. The young professionals got the opportunity to present their business and to develop new contacts with Google in order to increase their professional success. In addition, they also got a chance to learn more about Google Innovations and Jobs.

During the afternoon, over 100 participants (students, teachers, and startups young leaders) enjoyed a series of presentations held at the Higher Institute of Computer Science and Multimedia (ISIMS) at the Technology Park:

- "Presentation of Sfax GTUG", by Habib M. Kammoun, founder and chair of the Sfax GTUG. It is a user group for people who are interested in Google's developer technology; everything from the Android and App Engine platforms, to product APIs like the YouTube API and the Google Calendar API, to initiatives like OpenSocial.
- "Dynamic Entrepreneurship for Economic Growth of Sfax ICT Technopark", by Jihene Makni, head of Development and International Cooperation in Sfax ICT Technopark.
- "Innovation at Google", by Anastasia Leng
- "Google Apps Demos" and "Working at Google", by Ahmad Hamzawi

The day ended with a cocktail reception, hosted by Mercy Corps, which was a good opportunity for participants to further network with Google managers. Mercy Corps is a global aid agency engaged in transitional environments that have experienced some sort of shock: natural disaster, economic collapse, or conflict.

The success of the Tunisia GOLD AG activities was reported by Tunisian radio, e-newsletter, Google+ pages, and Facebook pages. ∎

For more information visit
http://sites.ieee.org/tunisia-gold/

RISE: Encouraging academic research in Egypt

Ahmed Morsi Ammar, Marketing Team Leader for RISE and research assistant at Nile University

"Research is to see what everybody else has seen, and to think what nobody else has thought" – Nobel Laureate, Albert Georgyi

RISE is a non-profit organization that aims to encourage and spread academic research in Egypt. The primary objectives of RISE are to create research awareness in the public, share knowledge and information among researchers, bridge the gap between industry and research, attract presenters from industry and authorities in both public and private domains, and drive innovation. Furthermore, in its long term vision, RISE aims to help enhance research in Egypt through different activities such as yearly innovation competitions, research awareness sessions, workshops, and developing tie-ups between industry and research institutions, etc.

RISE is initiated and driven by Research Assistants in the fields of Engineering, Pharmacy, Agriculture, Nanotechnology, Computer Science, and Electronics & Communications in collaboration with members from Science & Technology related industries as well as undergraduate students from several universities in Egypt.

RISE's mission as a research NGO is to:

- Provide a suitable platform for researchers for effective collaboration
- Hold annual research fairs and awareness events in all fields of science and literature
- Help develop strong links between academia & industry
- Provide a good environment for sharing new ideas and inventions and create opportunities to turn these ideas into products
- Help generate research funding.

RISE will be formally inaugurated at its annual research fair (RISE-RF) covering all areas of science and literature from 9 -11 October, 2012. During this fair, postgraduate and undergraduate students, specialists, industry representatives and faculty members will meet and share their research projects and ideas. This will be through a research exhibition and a series of seminars. Distinguished professors and figures from academia and industry will be invited as speakers and/or panel members for the exhibition seminars. In our first research fair, we aim to showcase new ideas to solve existing problems with no less than 70 research projects representing 10 different entities from universities and companies from all over Egypt. Special awards will go to the best research projects. ∎

For more information on Rise, please visit:
www.egrise.org
Facebook: *www.facebook.com/Rise.Eg*
Twitter: *@eg_Rise*

Region 10 IEEE GOLD Update
Timothy Wong - Region 10 GOLD Coordinator

Region 10 GOLD has had an eventful year so far with two GOLD Affinity Groups being awarded the MGA GOLD Affinity Group Hall of Fame award once again.

Two GOLD Affinity Groups in Region 10, namely, Kerala GOLD and New Zealand North GOLD Affinity Group are recipients of the MGA IEEE GOLD Hall of Fame Award. The other recipient of this award was the Egypt GOLD Affinity Group in Region 8. The IEEE MGA GOLD Hall of Fame Award recognises outstanding GOLD Affinity groups from around the world. There are three awards issued annually.

In 2011, the two of the recipients of this award from Region 10 were Malaysia and Lahore GOLD Affinity Group. This is a great achievement and testament to the excellent work performed by the Region 10 GOLD Affinity Groups. Congratulations the winners of the GOLD Affinity Group Hall of Fame Award and all the best for the remainder of 2012.

Region 10 GOLD will again be calling for nominations for the IEEE GOLD Achievement award. This award recognizes individuals who made outstanding achievement in GOLD projects or activities which fulfils the Region's goals

> **Region 10 GOLD has had an eventful year so far with two GOLD Affinity Groups being awarded the MGA GOLD Affinity Group Hall of Fame award once again.**

and/or objectives. The Region 10 GOLD award is designed to recognize those substantive projects or achievement of a relatively short nature (one to three years) that have left an undeniable imprint on the fabric of GOLD operations within Region 10.

This year, the Region 10 GOLD Affinity group award will be run for the first time. This award is designed to recognise a GOLD Affinity group that have made a significant impact on Region 10 GOLD goals.

Please feel free to contact the Region 10 GOLD Coordinator, Timothy Wong, for further information at timothy.wong@ieee.org—and visit the Region 10 IEEE GOLD website at www.r10ieeegold.org. ∎

Timothy Wong
Region 10 GOLD Coordinator
timothy.wong@ieee.org

Grassroots Science and Technology in the DoD

Dr. Alex Phipps PhD, SPAWAR Systems Center Pacific, San Diego, California

As a research scientist and engineer for the Department of Defense, my role is to take the latest scientific and technological advances and transform them into useful products to meet the needs of our military. After graduating with a strong set of technical and communication skills I assumed that moving from an academic environment to the defense world would be simple and straightforward. However, after working for only a short time I soon realized that I had a lot to learn. Unlike in academia, where fundamental research rules and publications are king, research for the DoD is more applied and success requires that technology be ultimately transitioned to the warfighter.

The biggest pitfall for DoD Science and Technology (S&T) workers is the so called "Valley of Death", a chasm somewhere between a great idea and a useful product. Navigating through the Valley requires understanding the complex rules and bureaucracy associated with the federal government and DoD acquisitions. The problem is that for the S&T workforce (technically-minded scientists and engineers) there has not been a clear map...until now.

At Space and Naval Systems Warfare Systems (SPAWAR) Pacific, a group of young S&T professionals, including myself, have taken it upon themselves to develop the tools necessary to successfully bridge the Valley of Death. The goal of this Grassroots S&T project is to help reinvigorate S&T at the center by helping young professionals avoid frustration and find success with all phases of their projects. Management at the center has been very receptive to this effort and workforce development funding for this project during the 2012 fiscal year was awarded through the Naval Innovative Science and Engineering (NISE) Program.

The Grassroots S&T project will produce several deliverables including a training course (which we are hoping will eventually be wrapped into the new-hire training regiment), a printed reference guide, and a website/wiki where pertinent information can be updated as needed. The specific topics to be covered by the course will include:

- Identifying warfighter needs
- Generating ideas to meet those needs
- Proposing and obtaining funding for ideas
- Performing S&T work
- Communicating what has been done
- Transitioning technology to the warfighter

With the guidance of an instructional designer, the content for the course and guide are being gathered from several places. Much of the required information is available internally and through the web, however, until now it has not been compiled specifically with the S&T worker in mind. Another great source of information comes through interview with senior colleagues who have had fruitful S&T careers. Leveraging the success of previous generations of the S&T workforce will provide a wonderful stepping stone for new professionals to begin their own careers.

While any immediate benefits of the Grassroots S&T project will most likely only be pertinent to SPAWAR employees, I hope that initiative taken on this project will
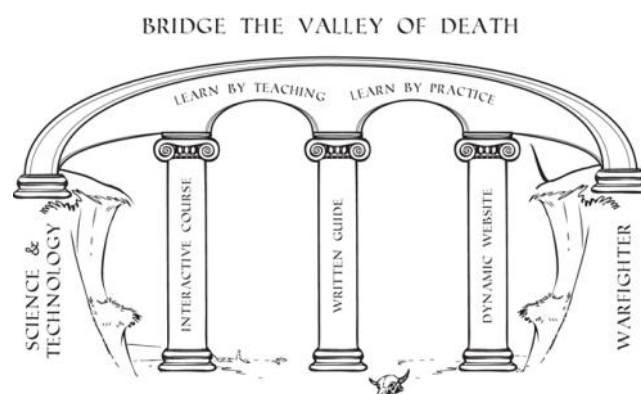
inspire other young scientists and engineers into similar action. Our role as problem solvers cannot simply be limited to the blackboard or the laboratory, but should also examine how our work is performed and find ways to perform it more effectively. Being successful in science and technology, or any industry, requires sometimes going above and beyond the call of duty, and this means taking the initiate to do not only what is asked, but also what is needed. ∎

Engineering Research: Reaching out from the Ivory Tower to the Disabled Community

Syamimi Shamsuddin, Graduate Student Member IEEE
PhD Student at Universiti Teknologi MARA (UiTM) Malaysia

Engineering is often envisaged as the branch of knowledge connected to maths and sciences to solve real-world problems. In most parts of the world, any person who wishes to practice as an engineer must first successfully complete an accredited degree in engineering. Therein lays the path to pursue postgraduate study to individuals who wish to reach the highest levels of his or her capabilities. Such pursuit relies greatly on the opportunities and the wealth of researches that are accessible in the institutions of higher learning. Undeniably, on-going research is the heartbeat of the university. It is the catalyst to the number of grants acquired from the government and private sector; and of course the 'magnet' that draws postgraduate students to the particular university. Despite all this, the research in engineering needs to be motivated by the 'values' it carries into the society. Then only the gap between academia (often termed as the 'ivory tower') and the community can be bridged together.

Robotics is a branch of engineering that involves the operations and applications of robot technology. The research trend in this area is experiencing a paradigm shift from industrial robots towards socially assistive robotics and human-friendly robots. Rehabilitation robotics is part of the notion that robots can play a substantial role in healthcare and specific rehabilitative interventions for elderly people and persons affected by neurodevelopmental disorders such as Cerebral Palsy (CP) and Autism Spectrum Disorder (ASD). With robotic intervention, it is hoped that the quality of life for the disabled can be made better and they may gain more independence in their daily lives.

Yes, we can imagine ourselves growing old one day. Nevertheless, people who are born without any disabilities can never envisage having a permanent disability throughout one's life. Hence, by using knowledge in engineering coupled with the motivation to help people, breakthroughs can be made and achieved.

In our Center for Humanoid Robots and Bio-sensing (HuRoBs) laboratory in Universiti Teknologi MARA (UiTM), our research motivation lies in our long-standing goal to contribute to a group of community that suffers from Autism Spectrum Disorder (ASD). ASD is caused by the differences in brain structure or function that affects a person's behaviour, social and communications skills. Sadly, there is no cure for ASD—but education, therapy and care has been shown to maximize the potential of the affected. In Malaysia, it is expected that 1 in every 150 children born has a typical autism. This is why for young children with ASD, the earlier they begin to get help, then the

> ...the research in engineering needs to be motivated by the 'values' it carries into the society. Then only the gap between the academia (often termed as the 'ivory tower') and the community can be bridged together.

The author during one of the robot-based intervention programs for children affected with
Autism Spectrum Disorder (ASD)

more opportunities will be accessible to them in the future. Through intervention and rehabilitation, they can achieve a high level of communication and social skills.

This initiative, though it is still at infancy stage, hopes to aid our team in better understanding the needs of children with ASD. Using the humanoid robot NAO as the research platform, it is anticipated that the robot's presence is able to trigger the children's interest during a therapy program. During the pilot study, children with ASD participate in a human-robot interaction (HRI) procedure where the robot executes basic, simple modules of interaction. In the next juncture of our study, the robot will be used to develop new therapy procedures, applying close human-robot integration to cater to various individual characteristics of children with ASD.

Yes, it is expected that not all children with ASD will be receptive to robot-based intervention. But such an effort can give these children a supporting and caring beacon of hope, showing that there are people who wish to embrace them as part of their lives.

As closure, let's hope that engineering research and knowledge are no longer 'confined' to the 'ivory tower'. Knowledge and passion combined will contribute positive impacts to our world. And by giving more and expecting less, we are building a greater tomorrow for future generations. ∎

IEEE GOLD Peer Reviewed Articles

An Overview of "Collaboration Innovation" Spaces in New Hampshire
Nathaniel Steier, IEEE Member

My name is Nathaniel Steier. I was born and raised in Queens, New York City and would eventually spend seven years in Portland, Maine and the last three in Portsmouth, New Hampshire. I call the University of Southern Maine my alma mater for my B.S.E.E. and am seeking a Professional Engineering (PE) license. I passed the Fundamentals of Engineering (FE) in October 2007 and have been an Engineer-In-Training (EIT) since.

I want to highlight the "collaboration innovation" (actually, "collaborative" would be grammatically correct, but I like the rhyme) that I have seen, experienced, and have been a part of in New Hampshire ("The Granite State").

MakeIt Labs

MakeIt Labs is located in Nashua, New Hampshire, and describes itself as an Open-Access Workshop. I like to use the comparison: "instead of a food co-op, think of an engineering co-op." It is broken up into three main sections:

- Automotive
  A sampling of the tools include: hydraulic lift, air tools, jack stands, and repair manuals for most car models and makes.

"Intro to Electronics and Soldering" class at MakeIt Labs
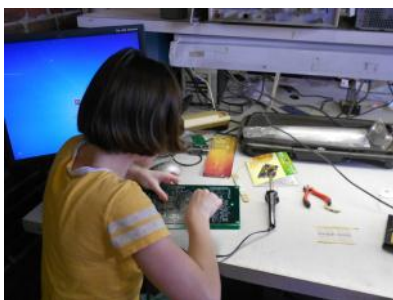
- Mechanical
  A sample of equipment includes: TIG welder, 12" bandsaw, Arc 'stick' welder, metal lathe, ¾ HP drill press, 3-axis machining mill, and a kiln.

- Cleanspace (Electronics and Conference Room)
  The Cleanspace (no "bunny suits") has access to an oscilloscope, function generator, multimeters, soldering irons, development kits, and a generous electronic component selection. Adjoining is the "Conference Room" which has couches, a computer projector and screen, and whiteboards.

There is a tiered membership system, comparable to a monthly gym membership. The higher tier offers incentives such as dedicated workbenches and storage space. There are many classes offered, ranging from: "Introduction to Electronics and Soldering", "MIG Welding Class", and "Automotive – Oil Change Class".

Alpha Loft

Alpha Loft is located in downtown Portsmouth, New Hampshire – literally in the center of downtown – called Market Square. Alpha Loft describes itself as a "coworking space" for "tech/creative/startups". There are two tiers of membership – permanent fixed desks and "float-y" (my

term) desks. It is an open environment – there is much communication between members – but make no mistake, when the earphones go in, serious work is being done.
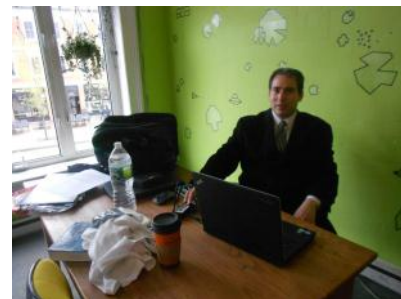
Atari sits in Alpha Loft

On top of all that, Alpha Loft has been hosting several tech-related meetings, usually several per week. This includes monthly User Groups that are centered around a particular topic or technology, such as: Java, .NET, Python, and Web Dev.

Port City Makerspace

Port City Makerspace is located in Portsmouth, New Hampshire barely a mile west of Market Square. It is a makerspace, similar to MakeIt Labs, and is scheduled to open this summer 2012. Port City Makerspace is initially targeting four shop disciplines:

- Wood
- Metal
- Electronics
- Bicycles

Port City Makerspace has access to four overhead bay doors – which means that it is not shy about accommodating large projects.

Makerspace under construction

Collaboration Innovation

In the above paragraphs, I described three different hotbeds of development in New Hampshire. However, the one thing I have not been able to capture is the spirit of innovation and collaboration that runs through these places.

Not only do you have a collection of talented people, you have an environment where people want to share those talents. This is something that must be experienced first-hand, and no word-count will do it proper justice. ∎

For more information, contact

MakeIt Labs
29 Crown Street,
Nashua NH 03060
www.makeitlabs.com

Port City Makerspace
124 Bartlett Street
Portsmouth, NH 0380
www.portcitymakerspace.com

Alpha Loft
3 Congress Street
Portsmouth, NH 03801
www.alphaloft.com

IEEE GOLDRush

Green IT and Sustainability

Kevin Luebe, IEEE Member, United States

Are we selfish as a culture? Do we think that our actions now really won't have any effect on the generations after us? Is sustainability just a buzzword? I am just one person, so can I really make that much of a difference?

Do any of these questions catch your attention? In a world full of wonderful existing and emerging technologies, most of us only care about what we're going to buy next, not considering "what should I do with my old technology." Taking into account the severity of our actions today really does create the world of the future. I've taken steps to live my life 'The Green Way' and I hope that, after reading this, you'll at least become cognizant of such a simple change in your life.

I suppose we could blame our appetite for 'things' on the Industrial Revolution and the American culture. We've become so accustomed to having what we want, when we want it, that we start to feel this sense of entitlement to feed our hungry souls. The Industrial Revolution shifted the culture so rapidly that there could only be one direction to move, forward. I'm not condemning forward progress—but along with the progress, there needs to be a sense of balance just as nature intended. Where am I going with all of this?

Green IT and Sustainability should be a common practice in both our personal and professional lives. When we buy something new it should be our natural behavior to properly recycle what we have replaced. Easy equation right? But it is often so difficult for us to understand the concept. Awareness, simplicity, education and a cultural shift are all current challenges currently blocking our ability to provide a clean planet to our children in the future. I think if we all understood what it takes to make a product and where the product goes when its lifecycle ends, we can start to align our thinking with sustainability.

Green IT and Sustainability reach out to more than just recycling your antiquated hardware. Each of our devices requires power to run and power is another beautiful gift we take for granted. Saving energy only requires

Kevin Luebe

you to turn off devices when they are not being used. Simple! If you use the devices frequently, set a sleep or hibernation mode to kick in after several minutes of inactivity. Purchase a tablet or laptop instead of a traditional desktop unit. Only print what you absolutely need to print and even then rethink?

There are many simple ways to rewire our brains into doing the right thing for our earth. The first one is to just practice. The more we practice, the better we get and eventually become so good at it that it becomes natural. The second way is to read and become aware of the latest advancements in Green IT and Sustainability. This awareness will contribute to sharing ideas, thoughts and processes with others (which brings me to the third way). Share the knowledge you have diligently gathered with your family, friends and peers. People who trust you are more likely to follow your paths to greatness. Any of these sound challenging? Try looking up Green IT on the Internet and you'll find a plethora of information to help you get started. ∎

Technology Design for Older Adults: the AAL Opportunities

Susanna Spinsante, Ph.D. PostDoc Researcher at Marche Polytechnic University, Italy. SMIEEE

Population ageing is a worldwide phenomenon, with remarkable effects on social and economic sustainability, especially in developed countries. Studies have shown that ageing has the strongest impact on long-term healthcare public investments, therefore, appropriate actions ensuring that current healthcare systems may cope with demographic and epidemiologic changes should be undertaken. Communication-based technologies may allow elderly people, and, in general, people with limited mobility (such as small communities living in rural areas) or with impairments to remotely access healthcare services, thus overcoming geographic barriers, and ensuring that services of similar quality may be provided to people living in different regions of a country.

Together with the possibility of setting up effective telemedicine services, technology may also provide older adults with the expectation of an easier, safer, and independent life, at their own home. These, and many others, are the main targets of Ambient Assisted Living (AAL) research and development activities. A great effort is taking place in Europe, since several years ago, in order to enhance the quality of life of older people and strengthen the European industrial base, through the use of Information and Communication Technologies (ICT). Viviane Reding, former EU Commissioner for the Information Society and Media, said: "*There is no reason for older people in Europe to miss out on the benefits of new technologies. The solutions and services resulting from the AAL program will help them to remain active in society as well as staying socially connected and independent for a longer time*".

Many of us have enjoyed the loving and affectionate presence of a Grandfather or a Grandmother in our life: they have been with us since the very first days of our life, accompanying us with their experience about life and its incredible evolutions. Being an Engineer and a Researcher in the AAL

IEEE GOLDRush

Toronto GOLD Affinity Group
Chairperson **Frank Oppong**

About Toronto GOLD

The Toronto GOLD Affinity Group is a subsidiary of the IEEE Toronto Chapter, which has been serving members and the community since 1903. The executive committee of the Toronto GOLD Section is comprised of a unique blend of energetic young professionals and graduate students, whose primary goal is to host high calibre, professional and technical events for its members.

The Toronto GOLD Section strives to host at least five events per year, catered towards a large member audience by covering a broad range of technical areas and professional skills. Two highly successful events this year included the Automotive Green Energy panel and networking night, and the Industry Mixer night. The group considers member feedback when planning events and seeking sponsorship to ensure absolute member satisfaction.

The most recent event, the IEEE GOLD Industry Night, was held at the Duke of Westminster Pub on May 9th in downtown Toronto, and featured special guests from more than ten prominent science and technology companies in the Greater Toronto Area, including AMD, Kapik Integration, Fresco Microchip, Semtech Snowbush IP, GE Healthcare, Sunnybrook Research Institute, and many more. This free social event offered attendees the opportunity to network among leading members from industry and academia, while enjoying complimentary drinks and hors d'oeurves.

Earlier in February, the executive team organized the IEEE GOLD Green Automotive Event at the University of Toronto, which featured four distinguished panel speakers from industry and academia that shared their thoughts and insights on the state of green technologies in the automotive sector. Hot topics such as recent technological developments and offerings from major automobile manufacturers, and environmental concerns were actively discussed. The group of expert panelists included: (1) Ian Forsyth, Director of Corporate Planning for Nissan Canada; (2) Matt Crossley, Director of Canadian Engineering for General Motors Canada; (3) Chris Hill, President and CEO of Electric Mobility Canada; and (4) David Hunter, Medical Physicist at Sunnybrook Research Institute. The event included brief presentations from all four speakers, and was followed by a lively panel discussion and networking session.

The Toronto GOLD executive team has three more events planned for September, October, and November: (1) a STEP event aimed at assisting young professionals make the leap from academia to industry, (2) another social industry networking night, and (3) a leadership and team building workshop.

The section's vice chair, Marc Carias explains that "one of IEEE GOLD Toronto's main goals is to provide its members with effective and timely communication between industry and academia by holding several events throughout the year. Marketing our events and providing assistance in between is where we push forward. Our most effective method of communication is our extensive e-mail list, which contains over 300 member and 75 professional contacts. We regularly send e-mails regarding our own and other events throughout the engineering community. Recently though, social media has become an explosive method of communication, and as a technologically driven group, we jumped on this opportunity to provide our members with yet another method of contact. We currently have Facebook page, Twitter feed, and our own web pages that the executive committee maintains. Here our members can access previous events, future events, connect with other members, provide feedback, and access various relevant postings such as job applications and upcoming conferences. With these tools, we believe that IEEE GOLD Toronto effectively reaches out to our academic and industry members."

The Toronto GOLD Committee

Chair: Vahab (Rob) Kamranpoor

Vahab Kamranpoor is an industrial product specialist currently working for Ontor Ltd. The company has an exclusive partnership with Siemens Canada (Industrial Controls & Automation Division). As a product specialist he is responsible for providing the customer with the right solution and product for their engineered application whether being automation products, software and technical support or assisting in Siemens conversion. Vahab Kamranpoor has a B. Eng. in Electrical from Ryerson University (2004).

Vice Chair: Marc Carias

Marc Carias holds a Bachelor in Medical Science with an Honors Specialization in Medical Biophysics from the University of Western Ontario in London, Ontario. In London he completed his third and fourth year undergraduate thesis at the Robarts Imaging Laboratories. There he focused on using low field magnetic resonance (MR) imaging to image the lung, in particular radio frequency coil design. Marc is currently a Master's of Science candi-

Toronto GOLD Affinity Group

date at the University of Toronto for Medical Biophysics. He is involved with the MR hardware at the Mouse Imaging Centre (MICe) associated with The Hospital for Sick Children. He will have designed and implemented a next generation of high-resolution, high-throughput MR imaging for research applications.

Secretary: Mathew Carias

Mathew Carias recently graduated from The University of Western with a Bachelors of Medical Sciences specializing in Medical Biophysics. There he conducted research at the Robarts Research Institute on model-guided cardiac interventions. He is currently a graduate student at The University of Toronto studying Medical Biophysics. He conducts his research at the Sunnybrook Research Institute, Imaging Research Department. There, he is working with the focused ultrasound group developing new tools to treat cardiac arrhythmias.

VP Industrial Relations: Mario Milicevic

Mario Milicevic received his Bachelor of Applied Science degree in Electrical and Computer Engineering from the University of Toronto in 2010. He is currently pursuing a Ph.D. in the Electronics Research Group at the University of Toronto, where his research focuses on the design of integrated circuit implementations of low power, Low-Density Parity-Check Decoders for upcoming digital communication standards. Mario has been involved with IEEE GOLD for one year as the industrial relations executive for the Toronto chapter. In his spare time, he enjoys skiing, martial arts, and playing saxophone.

VP Finance: Omar Falou

Omar Falou received his B.A.Sc. degree (Honour) in Applied Computer Science, M.A.Sc., and PhD degrees in Electrical and Computer Engineering from Ryerson University in 2003, 2006, and 2011, respectively. He is currently a research fellow in the Department of Radiation Oncology and Imaging Research at Sunnybrook Health Sciences Centre working under the supervision of Dr. Gregory Czarnota, director of the Odette Cancer Research Program. He is also a post-doctoral fellow in the Department of Medical Biophysics at the University of Toronto. *His current research* interests include developing new techniques for monitoring treatment response in cancer patients.

VP Marketing & Advertising: Mohsen Shafeie

Mohsen Shafeie received his B.Eng. degree from Ryerson in 2011 and is currently enrolled in the MASc program at Ryerson University. He is specializing in Biomedical Engineering and his research is in human motion and rehabilitation science. His Bachelor of engineering thesis was on regenerative prosthetics where a robotic arm was designed and built from scratch that not only consumed less energy but also regenerated power by motion. Mohsen's research interests include human motion analysis, human balance and stability detection, optimization in filter design and virtual environment, where he is working on different projects in collaboration with Toronto Rehab and Dynamic Structures LTD in Vancouver.

VP Marketing & Advertising: Elnaz Shokrollahi

Elnaz Shokrollahi received her Bachelors in Engineering with Honors from Ryerson University. Her M.A.Sc. in Electrical Engineering at Ryerson University was completed in collaboration with Toronto General Hospital; working on finding the origin of abnormalities in the heart. Elnaz is currently pursuing her Ph.D. at University of Toronto working on Robotics in MRI. She is working with a group at Hospital for Sick Children to develop a robot for bone biopsy in pediatric patients within the MRI. For the past year, Elnaz has been an active member of IEEE GOLD serving as VP of Marketing & Advertising and professional photographer of the events.

University Liason: Chao Chen

Chao Chen has been involved in IEEE since his second year in ECE at the University of Toronto. He has been secretary, off-campus representative, and president of the IEEE University of Toronto Student Branch. Acting as an executive, he helped coordinate many IEEE events, including the International Conference of Upcoming Engineers. Currently working as a software developer at IBM, he is still actively involved in IEEE activity as the University Coordinator of IEEE GOLD Toronto section and Chair advisor of IEEE University of Toronto Student Branch. ∎

IEEE GOLDRush Notices

2012 IEEE GOLD MGA Hall of Fame award winners announced

The IEEE MGA GOLD Hall of Fame award was created to recognize outstanding work by GOLD Affinity Groups. This is the first award created in GOLD to recognize groups rather than individuals. IEEE is successful not just because of individual contributions but also because of outstanding teamwork displayed by its members; hence this teamwork should be recognized.

The GOLD Hall of Fame recognizes how well the GOLD Affinity Groups (AGs) serve their members. The AGs should conduct a variety of activities; including professional, technical, social etc. and are encouraged to come up with new creative activities. In addition, the AGs should actively work towards recruiting more members and retaining existing members. They should also guide the student members in transitioning from student to professional and graduate school roles. Lastly, the AGs should spread awareness of IEEE and GOLD.

The MGA GOLD Committee would like to announce the winners of the 2012 GOLD Hall of Fame award:

- New Zealand North GOLD Affinity Group
- Kerala GOLD Affinity Group
- Egypt GOLD Affinity Group

The honorable mentions for this year include Bangalore GOLD Affinity Group, Argentina GOLD Affinity Group, and Toronto GOLD Affinity Group.

The competition was tough and we would like to congratulate all the sections for having a successful GOLDen year! All sections are encouraged to keep up the excellent work. Information about the nomination process for 2013 award will be emailed to all the GOLD Affinity Groups by the GOLD Regional Coordinators at the end of 2012. ∎

Technology Design for Older Adults: the AAL Opportunities

field is somehow a way of saying "thanks" to our Grandparents, by contributing to the design and development of new solutions and applications that may alleviate the difficulties inherent in ageing and prolong a rich and healthy life experience.

Among the many research activities within the AAL field, I am currently involved in the development of computer-vision based applications, aimed at two distinct primary targets: the first deals with non-intrusive monitoring of older adults for the early detection of possibly dangerous behaviors (related to physical or cognitive impairments), and the second exploits the adoption of video analysis to provide objective and reliable evaluation of the risk of falls exhibited by the older person. Since the beginning, during my Ph.D. course and later on, I have been working on video coding and analysis, but only a few years ago, this activity was devoted to specific AAL applications. In my opinion, this research field may open a number of new perspectives and possibilities to young researchers and engineers because it suggests the need of integrating strict technology-related issues into a holistic approach. This approach must take into account all the complex and fascinating facets of the human-technology interaction.

Moreover, working in the AAL field may also open new business opportunities that were unanticipated until a few years ago. My personal engagement in a spinoff company born from academic research in 2004 has allowed me to translate the results and ideas brought by research into real-world products and systems that can really help older people to improve their lives, the environment where they live, and to feel safer and more comfortable.

It was really great to receive appreciation and support from older adults and people with disabilities visiting our booth during an expo event focused on ageing and related issues. Here we demonstrated our proposals for an assistive home automation system based on different technologies and *ad hoc* human-system interfaces.

I strongly encourage young engineers and researchers to apply an AAL perspective to their current activities: contributing innovations to help our grandparents today will build a better time for all of us in the years to come. ∎

An example of assistive home automation system and ad hoc human-system interfaces from AAL research activities.

IEEE GOLDRush Call for Articles: September 2012 Edition

IEEE GOLDRush invites you to submit an article for publication in the September 2012 edition. The article topic(s) shall be of interest to young professionals, the primary readers of the publication. Articles must be strictly no more than 700 words and should be sent to the IEEE GOLDRush editor at GOLDRush@ieee.org on or before 24 August 2012. Please feel free to include captioned photos or pictures with your submission. All articles and photo(s) will be peer reviewed and edited if necessary. Full submission guidelines must be adhered to and can be found at **http://www.ieee.org/web/membership/gold/newsletter/goldrushPolicy.htm** ∎

2012 IEEE GOLD Committee

MGA GOLD Committee

MGA GOLD Chairperson
Eva Lang

Immediate Past MGA GOLD Chairperson
Will Sommerville

MGA Representatives
Jeffry Handal
Augusto Herrera
Martin Bastiaans

TAB Representatives
Aisha Yousuf
Hugh Griffiths
Matthias Reumann

GOLD Coordinators
Region 1   Brian Roberts
Region 2   Michael Pearse
Region 3   Nick Smith
Region 4   Arun Kumar
Region 5   Jennifer Kramer
Region 6   Gigi Lau
Region 7   Danoush Hosseinzadeh
Region 8   Salima Kaissi
Region 9   Carlos Artunduaga
Region 10   Timothy Wong

GOLD Society Representatives

Aerospace and Electronic Systems Society
Cosimo Stallo

Antennas & Propagation
Ryan S. Adams

Broadcast Technology Society
Heidi Himmanen

Circuits and Systems Society
Sunil Pai
Delia Rodriguez de Llera
Martin Di Federico
Pui-In (Elvis) Mak

Communications Society
Angela Yingjun Zhang

Computational Intelligence Society
Justin Zhan

Computer Society
Himanshu Thapliyal

Consumer Electronics Society
Carston Dolar

Council on Electronic Design Automation
David Atienza

Education Society
Aju Thomas Abraham

Electromagnetic Compatibility Society
Caroline Chan

Electron Devices Society
Ravi Todi

Engineering in Medicine and Biology Society
Matthias Reumann

Geoscience and Remote Sensing Society
Shannon Brown

Industrial Electronics Society
Pedro Rodriguez

Instrumentation & Measurement Society
Sanna Gaspard

Magnetics Society
Stephanie Hernandez

Microwave Theory and Techniques Society
Sergio Palma Pacheco
Jenshen Lin

Photonics Society
Ju han Lee

Power and Energy Society
Aaron St Leger

Robotics and Automation Society
Agostino Desantis

Sensors Council
Venkata Chivukula

Solid State Circuits Society
Sean Nicolson

Society on Social Implications of Technology
Emily Anesta

Systems, Man and Cybernetics Society
Wing Ng
Ferat Sahin

Vehicular Technology Society
Will Sommerville

> IEEE has announced a new benefit for members: Clements Worldwide Life Insurance. You are encouraged to learn more at: http://www.clements.com/ieeelife.

IEEE GOLDRush Team

Editor in Chief
Stuart Bottom

Layout Editor
Kenny Wong

Business Development
Mario Milicevic

Immediate Past Editor in Chief
Timothy Wong

Peer Reviewers
Agusti Solanas
Lisa Lazareck

Editorial Assistants
Jenniffer Estrada
Joanna Oommen
Kheng Swee Goh
Aisha Yousuf

> **Do you have feedback on GOLDRush?**
>
> Email us anytime at goldrush@ieee.org.
> We look forward to hearing from you!

IEEE GOLDRush