

DECEMBER 2010

# GOLDRush

*The quarterly newsletter of IEEE GOLD for young professionals*



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## WELCOME FROM THE 2010 MGA GOLD CHAIR *William Sommerville*



Dear IEEE GOLD Members,

It is great to be back with another issue of GOLDRush! I am excited about this issue because it is the best issue that I have read so far and I think you will like it too. Our volunteer team has pushed themselves and brought a wide variety of topics to this newsletter that we think will appeal to our peers, the graduate students and young professionals within IEEE.

I am coming up to one year on the job as the GOLD Committee Chair and I want to express my gratitude to the GOLD members worldwide that contribute to their profession and their communities through IEEE. The volunteers with whom I interact each day are some of the best people that I know, with many talents, skills, and insights that inspire me to push my own limits. I am truly blessed to have the opportunity to know the people on the GOLDRush team, the GOLD Committee, and throughout IEEE.

Our community was shaken recently with the tragic loss of a dear IEEE GOLD colleague, Gaspar Año. He was a gentleman and a scholar who would make anyone proud to count him as a friend. On behalf of the IEEE GOLD Community, I would

like to extend our condolences to his family and loved ones.

I hope that 2011 will bring better news and better times for us all. Our GOLD members will continue to get together to network and innovate at the 900 or so conferences to be held by IEEE next year. We will host STEP events, a.k.a. graduation receptions, for those that are about to enter our ranks. Many of us will hopefully be able to make it to the Sections Congress in San Francisco this August for our tri-annual GOLD Summit for an opportunity to meet each other, train, and help shape the future of GOLD.

We will continue to have GOLD webinars each month and our GOLD representatives within the technical societies will put on numerous events specifically for GOLD members, including tutorials, networking events, and professional development workshops. Our GOLD Affinity Groups continue to grow and prosper as well.

You may have noticed that we profile a GOLD Affinity Group in each edition of GOLDRush now. We do this so we can give them the credit they deserve and to spread good ideas for other Affinity Groups to use. I am very happy to report that we now have an official GOLD Affini-

**Continued from Page 1**

ty Groups Hall of Fame Award, which will be presented to three Affinity Groups each year along with \$500 and a handsome

plaque. You will find the details about this award and our highly respected 2010 MGA

GOLD Achievement Award winners below. Best of luck to you in 2011!

## Editorial

By Timothy Wong, IEEE GOLDRush Editor



Welcome to the final edition of GOLDRush for 2010. For the GOLDRush editorial team, it has been a busy year with many new initiatives being developed for GOLDRush to continue to serve you better. We would welcome your feedback.

With the year coming to an end, and somewhat winding down, this would be a good time to reflect on this year. Take a look at your successes and failures and think about the lessons that you can learn from them. Also, take this opportunity to either plan or re-visit your plan for your life and career. A colleague once said to me “plan where and how to tread in your career and life carefully, otherwise it may cost you opportunities later on.”

When I reflect on my experiences so far as an IEEE member and volunteer, I see IEEE as something similar to a family. Let me explain. The IEEE is more than just a not-for-profit organization; it feels like a large family of like-minded profes-

experiences, IEEE members are brought together by their common passion in engineering and science. I believe that it is this commonality that makes us like a family.

Every now and then, I get asked why I volunteer. After all, I don't get paid to volunteer and that time could be spent doing other things and making money. I think that for many people, including myself, there are a number of reasons why we volunteer; volunteering for me has provided unique opportunities for building my professional networks and improving my technical and non-technical skills. It provides me with opportunities which I may either never get in the workplace or may not get until many years later. For example, the opportunity to lead a group of volunteers (similar to leading employees), may not be an opportunity available in the corporate world until several years later, when engineers tend to take on more supervisory and management roles. There is also this sense

As we wind down the year, I would like to thank the IEEE GOLD committee and IEEE GOLDRush editorial team for their ongoing good work and support throughout the year. Without their support, producing GOLDRush would not have been possible. I hope you have enjoyed the 2010 editions of GOLDRush newsletter. We look forward to providing you quality content in 2011 and beyond.

***“Plan where and how to tread in career and life carefully, otherwise it may cost you opportunities later on.”***

sionals, united by a common membership. With the Graduates of the Last Decade (GOLD) group, the membership consists of a diverse group of people from many walks of life and from many places in the world. They openly help their fellow IEEE members and are generally enthusiastic about their profession, people, and environment. Despite the differences of life

of altruism, in other words, unselfishly caring for and showing concern for others. I, like many volunteers, get that “warm fuzzy feeling” knowing that my work has made a positive difference to those around me. For another perspective, I encourage you to read “An idea for saving the world: efficient volunteerism” by Nicholas Vaidyanathan in our readers' forum section.

Innovation doesn't just happen.  
Read first-person accounts of  
IEEE members who were there.

**IEEE Global History Network**  
[www.ieeeagn.org](http://www.ieeeagn.org)

**IEEE**

## READERS' FORUM

*Your questions and opinions*

### An idea for saving the world: efficient volunteerism

During an internship at Intel Corporation during the summer of 2010, I was fortunate to have the opportunity to participate in several volunteer activities. Intel believes strongly in the power of community and being a good citizen, as demonstrated by the frequency of planned volunteer activities. I helped fit low-income children into new school clothes, I collected garbage around a community center, and helped install a new operating system in a food bank's computer. These activities were enjoyable, but I wonder how effective they were?

I chose engineering as my field of study because I wanted to Save the World - pure and simple. Although there are also the financial incentives of working as an engineer, many of the engineering students I meet are compelled by a feeling that they can do something more. When I think of people like Thomas Alva Edison, the Wright Brothers, Noyce, and Moore, I feel inspired by the way they have literally changed the world. They enabled miracles that would have been called "magic" hundreds of years ago, such as powered flight and instantaneous communication.

That is what an engineer can do. We are the Magic that can shape the future. Or, so we believe, as we plug away 15+ hours/day in a computer lab at school, while we procure our degrees. During the last few years of school, when coursework became especially rigorous, we dream of finishing so we can work, get paid well, and make something of value.

What many of us find, however, when we get into the professional world, is that we are like cogs in a machine. It becomes difficult to determine our value-add in the Grand Scheme of Things. "How am I saving the world today?" can be a tricky

question to answer.

With all of our professional responsibilities, personal relationships, and other obligations, it can be difficult to find time to give. We learn to scale back our expectations, thinking that if we can engage in just a few activities here and there, we can feel good about ourselves. Perhaps we help children build mousetrap cars or we volunteer for a day at a half-way house, picking up trash. Surely, doing these things makes us good people, right?

Yes, but we can do so much more! These activities, while noble spirited, are vastly under-utilizing our talents. Young engineers have an incredible opportunity to manifest themselves in their external world and make a positive difference. That difference is not limited to their workplace. That difference is not maximized by engagement in haphazard activities. That difference is maximized by the effective use of acquired skill-sets when solving social issues.

We spend so much of our lives learning how to be an engineer, building circuits, constructing bridges, making software. Yet, when we seek to give back, we find the most menial ways of doing so. Why don't we use the skills we worked so hard to obtain?

Countless community agencies are crying out for automated, robust systems to help them manage their workflows and clientele. Articles in mass media<sup>1</sup> decry the cracks in America's Infrastructure. A digital divide creates economic disadvantages for people in rural areas. All of these initiatives beg for the elbow grease of engineers. But where are we? Working 12 hour days and taking one or two days out of a quarter to volunteer small chunks of time in unrelated activities.

Why? Because big initiatives like this are projects. Projects require an enormous expenditure of energy and commitment.

Time, money, initiative...it is easy to find reasons to say "we can't." "The problem's too big. We don't have the resources..."

Meanwhile, IEEE reports operational surpluses of \$21.4M<sup>2</sup>. Hacker Spaces<sup>3</sup> show a flourish of activity in all types of enjoyable creative activities<sup>4</sup>. What if we turned these energies to solving community problems through careful project road-mapping and management by local organizations and applied periods of intense effort by "experts" to make a substantive difference?

What if I and a team of 4 GOLD IEEE Computer Society members adopted a community center and developed/setup a miniature CRM system? What if Power and Energy Society (PES) members picked a small building to retrofit with alternative energy? Think of the possibilities of a concentrated use of energy by creative consultants!

It is good to find ways of giving back. There is nothing wrong with running a five kilometers for breast cancer. But we can do more!

**Nicholas Vaidyanathan**  
Tempe, Arizona, USA  
IEEE Graduate Student Member

1. [http://www.economist.com/node/1163651?story\\_id=11636517](http://www.economist.com/node/1163651?story_id=11636517)
2. <http://online.qmag.com/IEEEAR09>
3. <http://en.wikipedia.org/wiki/Hackerspace>
4. <http://www.heatsynclabs.org/>

*Express your opinions on GOLDRush articles and ask questions to the authors by submitting a letter to the GOLDRush Readers' Forum. Send your submissions to [GOLDRush@ieee.org](mailto:GOLDRush@ieee.org) before 5 February 2011 for inclusion in the March 2011 edition. Submissions must be no more than 200 words and may be edited if necessary. We look forward to hearing your thoughts!*



## GOLD MEMBER PROFILE

## Dr. James William Darbyshire



### Career description:

I completed my Bachelor's degree in Electrical and Electronic Engineering at the University of Western Australia in 2004. As part of my honours thesis, I researched power electronics applications for fuel cells. I also developed power electronics and controls for an electric car as part of a Renewable Energy Vehicle project.

In 2005 I was fortunate to receive an Australian Postgraduate Award, granted through a local renewable energy company (Regen Power) and Curtin University of Technology with support from the Australian Research Council. I used this award to conduct research on the development of power electronic interfaces for renewable energy systems. Through this endeavour I designed, engineered, and implemented a variety of hybrid renewable power systems in Western Australia. The highlight

of this work was the power system for the Eco Beach Wilderness Resort, located south of Broome in Western Australia. With the completion of this research, I was awarded a PhD in July 2010.

Currently, I work as a Power Systems Engineer in the Sustainable Energy Solutions Team within Islanded Systems Development for a company called Horizon Power. Horizon Power is a vertically integrated power utility responsible for generation, networks, and retailing for remote Western Australia. Currently, my duties involve being a design engineer for multiple islanded power station projects currently under development. Implementing and increasing the renewable energy contribution to our power grid is a key goal, and one filled with many interesting technical challenges where little research has been previously conducted. The very nature of power station control, network management, and protection is being challenged with the onset of new technologies including smart grids, demand response, and energy storage. So much work is required in these areas to ensure we have more sustainable power systems worldwide.

I feel the biggest challenge we face today is a psychological one: a flawed perception of what is economically "free." A living, natural, untouched forest has no value in our society until it is converted to timber. Air quality, water quality, and the diversity of our flora and fauna need to have economic value to be preserved for future generations.

### What are your personal interests (i.e. hobbies)?:

I enjoy playing cricket and squash once a week in a social yet competitive environment. After university I moved close to the ocean, and I still enjoy running on the beach. I enjoy travel and have tried hard to become good at photography but this is a work in progress. In the next three years I hope to travel through the Kamchatka peninsula and climb Mt Kilimanjaro – while it still has some snow!

### How has IEEE helped your career?:

The IEEE is my key source for keeping up-to-date with relevant information in the electrical discipline. I subscribe to journals in my personal areas of expertise, read IEEE Spectrum monthly, and access the IEEE online portal frequently. During university I regularly attended and enjoyed various IEEE workshops, gatherings, and professional development sessions. I believe all of these IEEE benefits have had a positive impact on my career, and I recommend others utilize them too.

### Any words of advice for young professionals?:

Never stop learning. I have used information from the most unlikely sources to assist in solving unknown and disconnected problems. University usually teaches you to be quite specific in a distinct area of expertise, but you should always be willing to pick up a textbook outside your discipline. Be willing to occasionally tread the path least followed, especially in a field where new technology is being applied.

## IEEE GOLD COMMUNITY NEWS

*From around the world*

### Helping Students Transition to Young Professionals with IEEE STEP

Over 30,000 IEEE student members graduated in 2010. These graduates are now part of the GOLD community, as higher grade members.

GOLD developed the Student Transition and Elevation Partnership (STEP) program to help recognize students graduating and welcome them into the GOLD membership.

GOLD Affinity Groups around the world have conducted STEP Events to

- recognize graduating students;
- illustrate IEEE member benefits appropriate for young professional members; and
- introduce these new GOLD members to the local IEEE entity beyond the student branch.

Funding is available for STEP events through MGA GOLD. More information on the STEP program, as well as Funding Request Forms, can be found at [http://www.ieee.org/membership\\_services/membership/gold/step.html](http://www.ieee.org/membership_services/membership/gold/step.html).

For more information please visit: [http://www.ieee.org/membership\\_services/membership/gold/step.html](http://www.ieee.org/membership_services/membership/gold/step.html)

### STEP: The Balanced Approach Baton Rouge Section

In the small corner of Cajun Country, the students and GOLD folks for the Baton Rouge section joined forces to put together a great show. It was a rather ambitious agenda but we pulled it off. Thanks to the funding provided by the GOLD STEP Program and the streamlined application process, we came up with a great and balanced event. The organizing committee was able to bring in folks from the consulting and utility business, the licensure board of Louisiana, and LSU graduate school. They all gave about a 25-minute presentation on what they do and how it was related to what was learned in

school. Some of the take-away thoughts included:

- Consulting offers diversity, whether it comes from working with others or types of jobs a person might get involved with.
- The utility industry may have been stagnant for a while but is regaining strength with all the integration and changes coming about from the smart grid.



*Pictured: STEP Event at Baton Rouge, Louisiana, USA*

- Licensure is always good to consider, especially if you want to progress in your career and get some recognition

## STEP: The Balanced Approach

(Continued)

among peers. The sooner you take it, the better off you will be.

- Graduate school has its rewards and compensation (e.g. freedom of time)

but is not for everyone. One great recommendation offered is to do it soon, as it gets harder to learn as you get older.

I would like to thank the GOLD committee for offering the financial support to make the event possible. I was able to spend more time putting the event together rather than figuring out where to get the money from. I encourage all GOLD chairs

to take advantage of this program and to work closely with the student chapter in your area. They are the future GOLD members and are always enthusiastic to help.

## The GOLDen STEP - celebration of IEEE Day

By Joyce Mwangama  
Chairperson, University of Cape  
Town IEEE Student Branch

The IEEE South Africa Section's GOLD Affinity Group (Southern Region) and the University of Cape Town IEEE Student Branch were proud to host an IEEE GOLD Student Transition & Elevation Partnership (STEP) event attracting audiences from the university and professionals from in and around Cape Town. The event was held on 7th October and was also in celebration of IEEE Day.

Dr Khan., Student Branch Counsellor opened the event with a welcome speech to all in attendance. Joyce Mwangama, Student branch Chairperson spoke about the importance of synergy between the student branch and the GOLD affinity group. She also spoke on behalf of the IEEE GOLD AG Chair on the transition for the graduating students into young professionals and how IEEE GOLD can benefit them.

The keynote speech was given by Michal Wronski. Michal was a past graduate from the University of Cape Town and an IEEE member; he received his BSc (Eng) Hons Electrical and Computer degree in 2008. In only 2 years, he has successfully



*Pictured: Local organizing committee preparing for the event*

formed a social media analytics company called 'Fuseware', of which he is currently the managing director. He spoke to the students about his experiences and transition from being a student to being a professional.

The main portion of the evening was for the graduating students to socialize with invited guests from engineering companies in Cape Town. This included Peralex and Altech UEC which focus on electronics, Cape IT Initiative and Korwe Software catering to the software engineers, Metro-



*Pictured: Audience socializing over food and drink*



*Pictured: Group of IEEE members and final year electrical engineering students.*

rail and Eskom for the heavy current students as well as representatives from the South African Institute of Electrical Engineers (SAIEE). Some 60 students, 5 staff from the electrical engineering department and 13 industry guests enjoyed the interactions over good food and drink.

The evening was wrapped up by thanking all the students for attending and especially congratulating all the graduating students on their achievements. A lucky draw saw three lucky students winning 2nd and 3rd prize of iPod shuffles and 1st prize of 12 months free internet.

Overall the students benefited from the opportunity to interact with a wide variety of engineering professionals as they are about to embark on a new phase of their lives.

Joyce Mwangama  
E-mail: [joyce.mwangama@ieee.org](mailto:joyce.mwangama@ieee.org)



## IEEE GOLD Lebanon STEP Event

By Michel Khayat  
Chairperson, IEEE GOLD  
Lebanon Affinity Group

The IEEE GOLD Lebanon Affinity Group organized the STEP event to celebrate the graduation of IEEE members of the five major engineering universities in Lebanon. The event was held on Thursday the 7th of October, in Beirut, at the American University of Beirut with the help and coordination of the AUB-Student Branch. This event coincided with the IEEE Day worldwide event. IEEE Day was a global event held on 7-8 October 2010, in recognition of IEEE members on the anniversary of the first time IEEE members gathered to share their technical ideas in 1884.

The STEP event is a standardized yet localized program for facilitating the transi-



*Pictured: AUB Student Branch Committee and Volunteers*



*Pictured: Speakers (From Left to Right), Dr. Imad Elhajj, Mr. Simon Nasr, Mr. Elie Nasr*



*Pictured: Local organizing committee preparing for the event*

tion from student member to young professional, by introducing the opportunities and benefits of IEEE membership during the onset of a career.

The event included speakers from industry and the IEEE. The program included the following sessions:

- IEEE GOLD Benefits & IEEE Lebanon Section Activities and Overview.
- Speaker: Director of the Order of Engineers and Architects of Beirut. Presentation about the benefits of the order (syndicate), in addition to the enrolment process.

- Speaker: Founder of a VAS and Mobile applications company, who provided the students with up-to-date information on the current mobile application market, in addition to the current trends and consumer tastes in this area.
- General Knowledge competition with lots of prizes!



*Pictured: Graduate IEEE member receiving his Award*

## Da Vinci and IEEE Day

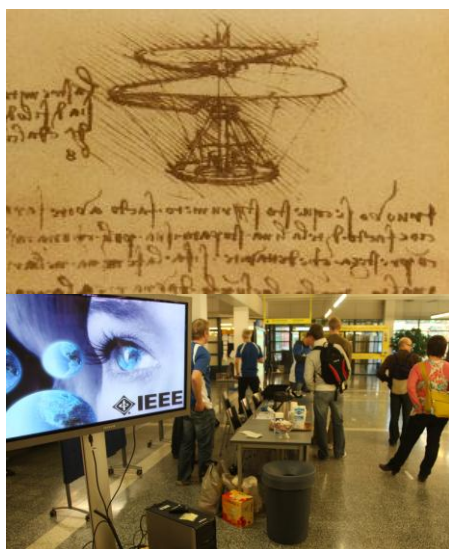
By Rafal Sliz  
Finland GOLD Affinity Group

### Birth of the plan

The IEEE Finland GOLD Affinity Group along with the Student Branch, came together to plot how to capture and secure the central hall of the University for about four hours from 10.00-14.00 on the 7<sup>th</sup> of October. The idea was to make such an impact on 7<sup>th</sup> of October that the next day, people would wonder about the strong IEEE presence in the central hall and be filled with curiosity and amazement.

But what? And how? In the silence as everyone pondered, scratching their young engineering heads still covered with in most cases, vibrant hair. Then suddenly, that age old force that pushed engineers from different ages and generations toward their goals. Alas, our answer was found in Leonardo Da Vinci's drawings: HELICOPTERS.

We set off to plan a day that would truly leave its mark, a day that would have most of the University of Oulu talking about IEEE.



*Pictured: The Leonardo Da Vinci helicopter (above), IEEE display stand (below)*



*Pictured: The organizing team*

### The site

The 7<sup>th</sup> of October, IEEE day, was arranged at the central hall of the University of Oulu. Some hazard billboards were fixed at a central location and a path line of IEEE logos stuck on the floor with see-through tape to guide passers-by to the site of activity.

An information desk with general information regarding the IEEE organization and IEEE membership for interested candidates was set up at the site. The information desk had candy, coffee and other refreshments to lure people closer. A wide plasma screen of about 50", which ran promotional videos of IEEE and its activities in general was also present at the site. A section of the main hall was sealed off for the helicopters - yes the helicopters.

A competition that involved radio controlled helicopters was arranged. The aim was to fly the helicopter from an initial starting position to another about 3 meters away with the fastest time. A separate landing zone was designated behind a 3 meter line from which the attendee could receive minus 10, 20 or even 30 seconds from their overall time if they would successfully land there. The rules were easy; each attendee had 2 minutes during which they could try and get the helicopter over the 3 meter line. If no successful landing was achieved within 2 minutes the attendee would be given a zero time and a consolation gift (IEEE pen, foam cup holders, etc.) for being a good sport and attending. There was also a projector at the site that projected the top 10 teams of the day, in real time, on a white canvas. The main prize was a great tech-

nical IEEE shirt that was designed for this occasion, as can be seen in the images. They were giving out as the main prize for the first 5 contenders.

### The day

The day turned out to be a huge success. There was a high level of activity and participation among the IEEE members. This was because everyone was well informed about their duties and tasks related to the event and everyone was bustling with enthusiasm toward the event. This event increased the visibility of IEEE. People were whispering about IEEE and helicopters from one end of the University to the other. There were about 500 people that visited the site and over 100 people attended the contest. Many people came to the information desk to ask about IEEE and about 8 people expressed their desire to be informed about IEEE events in the future and expressed an interest to be involved.

At the moment, video footage of the event is being edited with the aim to publicize it in IEEE.tv. Again we would like to express our gratitude towards everyone who helped support this event and in doing so were part of the success of this event. For more information on the event or on what is going on in our hemisphere please visit <http://www.ieeegoldfinland.org>



*Pictured: Professional instruction for all aviators (above), Live results for the helicopter flying (below)*



## IEEE GOLD Site Visit to Nga Awa Purua Geothermal Power Station

By Noel Gomes  
IEEE GOLD New Zealand North Section

On 25<sup>th</sup> September 2010, the IEEE GOLD New Zealand North organized a site visit to the Nga Awa Purua Geothermal Power station. The event was well attended by GOLD and student members including a few young professionals from a wide range of engineering disciplines including reservoir engineers, civil, computer systems, electronics and electrical engineers.

The purpose of this event was to provide young professionals with an insight into the day to day operations of a state of the art geothermal power station. The event started with a four hour long drive from Auckland to Taupo, a volcanic town with significant geothermal potential, located in the centre of the North Island of New Zealand. The journey involved driving past dairy factories, a pulp and paper mill and a thermal power station. This included a stopover at the Aratiatia Rapids to witness the power of nature when the spill gates open and turbulent water gushes down a narrow gorge, surging past up to 90,000 litres per second.

On reaching the geothermal power station, we were first inducted onto the site with a safety briefing followed by an introduction of the plant, its capacity, main features and the various steps involved in geothermal extraction. This was followed by a visit to the steam separation area which included the rock muffler, acid dosing pumps, re-injection pumps, high, medium and low pressure separators, cooling water tower, the turbine hall and the local control room. Several stops were made to explain the functionality of various plant equipment and to answer questions. The



*Pictured: Attendees enjoying the tour*

two hour tour ended with a networking session including drinks and pizzas at the Taupo lakefront.

Some of the highlights of the power station included:

- It is the second largest geothermal power station in New Zealand with a generating capacity of 140 MW, enough to power 130,000 homes. The project is the second joint venture between the state owned Mighty River Power and the Tauhara North No. 2 Trust, following the success of the Rotokawa geothermal joint venture.
- The station consists of a triple flash high, intermediate and low pressure steam system that is used to drive the turbine. Its single unit turbine makes it the largest single shaft generating turbine in the world.
- The plant extracts 45,000 tonnes of geothermal fluid per day at 300 °C over 9 km from 8 production wells (2-2.5 km deep) and re-injects majority of the fluid back into the ground via 5 injection wells (3 km deep).
- The geothermal steam is first separated from the water (brine) in the high pressure (HP) separator. The remain-



*Pictured: Nga Awa Purua Geothermal Power Station*

ing brine is then 'dosed' with sulphuric acid to prevent the deposition of silica in the pipes and equipment. Lower pressure steam is then separated from the dosed brine in the Intermediate and Low Pressure Separators. The High, Intermediate and Low pressure steam is then 'scrubbed' (cleaned) to remove harmful gases and sent through to the turbine to generate electricity. The steam, after passing through the turbine is then condensed and pumped through to the cooling tower for further cooling. Some of the cooled water is recycled and fed into the condenser to condense the steam and the rest is reinjected back into the ground through a number of re-injection wells.

- The station generates electricity at 11 kV and connects directly to the national transmission grid at 220 kV. The power station can be controlled manually or remotely from its local control room.

The NZ\$430million power station was completed five weeks ahead of schedule, on budget and with a greater capacity than originally anticipated - a reflection of the excellent project planning and execution. It is one of the biggest geothermal power stations to be built anywhere in the world in the past ten years. The project is a significant milestone for geothermal energy in New Zealand and speaks highly about New Zealand's leading skills in geothermal exploration.

The attendees were very impressed with the features of the world class geothermal power station and the tour. The event provided a great opportunity for student engineers to network with young professionals. This field trip has strengthened our ongoing relationship with Mighty River Power and we look forward to maintaining this relationship in the years to come. The committee would like to thank Mighty River Power for the opportunity to visit the site and all the attendees for their participation and time.

## GOLD Summit – Colombian GOLD members meeting

By Jenifer Castillo

On September 15<sup>th</sup>, the GOLD Colombia Team along with the Professional activities coordination of the IEEE Colombia Section organized the first ever GOLD Summit held in this country. This event lasted for 6 hours, and comprised of 4 main talks and lunch for the 60 people that attended the summit. The GOLD Summit was held during the IEEE Andean Conference Andescon 2010.

Tania Quiel, Region 9 Coordinator, was in charge of the opening of the GOLD Summit with the talk titled "IEEE and personal development" which not only let the audience know a little more about IEEE but also showed a large amount of examples about how IEEE can be a support for the goals accomplishment.

Keeping in mind the vision that nowadays IEEE is working on, advancing technology for the humanity, the organization included "IEEE humanitarian technology



*Pictured: GOLD Summit attendees*

challenge" as one of the main topics. This presentation, given by Eduardo Navarro - R9 HTC representative, offered the GOLD members and other attendees an exciting way to volunteer and also help society.

Edwin Echeverry, IEEE Medellin Subsection chair and a successful businessman in Colombia, shared his experience of being an entrepreneur and leading his own company, Compuredes, in his speech "Making enterprise, my life experience". This talk motivated volunteers to take risk, be leaders and generate employment, and

develop their own ideas, goals and businesses.

Leadership is one of the most important skills that an engineer must have, and the encouragement of this skill is one of the main tasks of GOLD. Keeping this in the mind, the final talk by Ravi Todi, Ph.D.- IBM Microelectronics and IEEE Electron Devices Society GOLD representative, was titled "Leadership skills for young engineers and scientists in the 21st century", in which he discussed several abilities that any engineer, especially a young one, should have and develop, resulting in a very motivating experience for GOLD members.

As a result of these talks, the GOLD summit got to be the first GOLD members' meeting. Some of the main benefits were that it provided a forum for members' needs to be listened to, along with tools and supportive information for achieving their goals. It also provided a great opportunity for attendees to network not only with each other but also with the speakers who joined them in the event. If you joined us in this event and have suggestions for the organizers, please feel free to get in contact with the GOLD Colombia team at [gold@ieee.org.co](mailto:gold@ieee.org.co)



*Pictured: Ravi Todi presenting on "Leadership skills for young engineers and scientist in 21st century"*



*Pictured: Edwin Echeverry presenting on "Making enterprise, my life experience"*



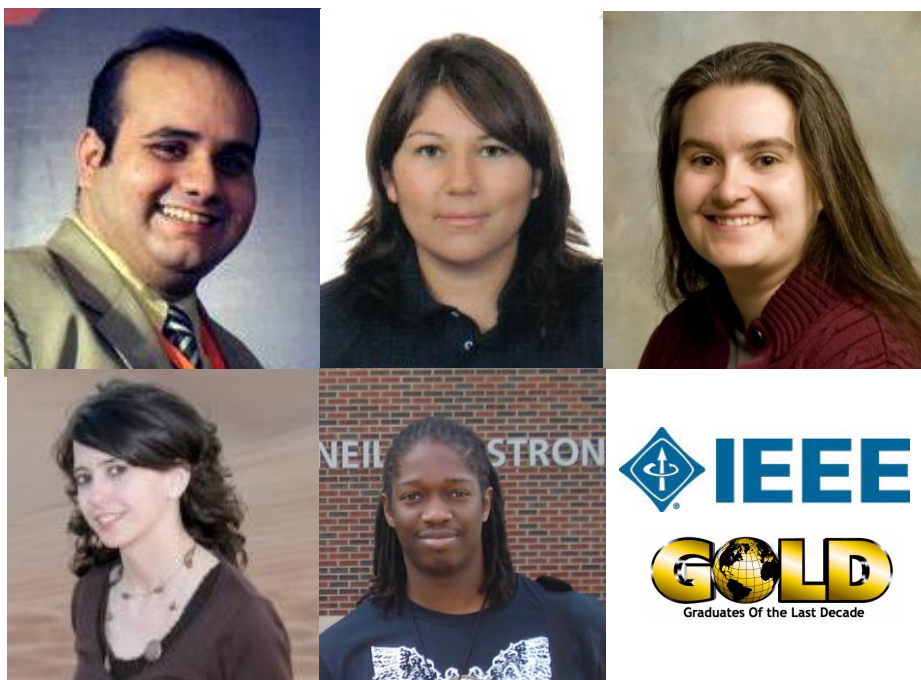
## 2010 MGA GOLD Award Winners

The awards and recognition program of the IEEE Member and Geo-graphic Activities Board (MGA) is designed to promote, recognize, and reward excellence in the MGA operations and IEEE Geographic Unit Activities (Regions, Geo-graphic Councils and Areas, Sections, Chapters, Student Branches, and Student Branch Chapters). This year members of GOLD were awarded both MGA Achievement Awards as well as MGA GOLD Achievement Awards. The MGA Achievement awards are designed to recognize individuals involved with MGA and/or the Regional Network who are recognized for singular achievement in the development and completion of a project(s) or activity(ies) which are directed to the fulfillment of one or more of the goals and objectives of MGA. This award is designed to recognize those substantive projects or achievements of a relatively short nature (one to three years) but which have left an undeniable imprint on the fabric of Regional Operations. The MGA GOLD Achievement award has similar criteria but is awarded for contribution to GOLD operations and fulfillment of GOLD goals and objectives. Nominees must be GOLD members at the time of nomination.

After reviewing many nominations, the MGA Board has approved the following recipients for 2010:

**M. Rafaeel Akbar Chaudhry (R10)**, Lahore Section. -For his efforts in substantially increasing member engagement through the IEEE Lahore Section GOLD Affinity Group Activities.

**Nana Ampofo-Anti (R8)**, South Africa Section - For his dedicated efforts toward the success of IEEE EPICS-High Projects



*Pictured: Clockwise from top left: Rafaeel Akbar Chaudhry, Jenifer Castillo Rodriguez, Jennifer Schelly and Salima Kaissi, Nana Ampofo-Anti*

that have fostered IEEE member engagement through service to the community.

**Jenifer Castillo Rodriguez (R9)**, Colombia Section - For excellent leadership and remarkable contributions to IEEE GOLD member engagement, collaboration, and networking within the IEEE Colombia Section.

**Salima Kaissi (R8)**, France Section - For her outstanding contributions to public visibility of IEEE by creating and implementing the idea of establishing a global IEEE Day.

**Jennifer Schelly (R1)**, New Hampshire Section - For outstanding leadership and substantial contributions to the IEEE New Hampshire Section Joint WIE/GOLD Affinity Group and Region 1 GOLD activities.

## 2010 Region 10 GOLD Award Winner

Since 2006, Region 10 has had an annual GOLD Award which recognizes individuals who made outstanding achievement in GOLD projects or activities which fulfills the Region's goals and/or objectives. This 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.

I am pleased to announce that the winner of the 2010 Region 10 GOLD Award is Gowtham Prasad from the Bangalore Section. Please join me in congratulating Gowtham on this outstanding achievement.

Timothy Wong  
Region 10 GOLD Coordinator

**Comments on this article?**  
**Write to our Readers' Forum at**  
**GOLDRush@ieee.org**



## VOLUNTEER PROFILE

## Joe Lillie

**Career description:**

I received a B.S. in Electrical Engineering (1974) and a M.S. in Telecommunications (1997) from the University of Southwestern Louisiana, now the University of Louisiana at Lafayette (ULL). In total, I've spent 37 years working in telecommunications engineering and management. I was employed by BellSouth Telecommunications from 1973 to 2002, where I held the positions of Design Engineer, Planner, District Support Manager, Engineering Manager and Planning Manager. When I retired in 2002, I was on the Louisiana BellSouth State Staff providing engineering and construction support. In 2003, I joined the NorthStar Communications Group where I served as the Director of Corporate Quality and led the company to ISO 9000 and TL

9000 certifications. In September 2005, I returned to BellSouth (now AT&T) and worked on Hurricane Katrina restoration. I continue to provide engineering support to AT&T in Louisiana on a part time basis. I also perform ISO 9000 internal audits for small companies who provide services to the telecommunications industry.

During my professional career, I attended numerous training sessions on telephony, management, leadership, contract administration, and quality management.

I've been married to my wife Debbie for 38 years. We have a son and a daughter, both Electrical Engineering graduates of ULL. We also have three grandsons and two granddaughters.

I have been active in the IEEE since joining as a student in 1972, and served in leadership positions at the Section, Region and International levels. I served six years on the IEEE Board of Directors, two years each as Region 5 Director, IEEE Treasurer and Member & Geographic Activities Vice President. I also served on numerous IEEE Committees and was a board nominated candidate for IEEE President-Elect in 2009 and 2010. I currently serve as Treasurer and Director of the IEEE Foundation.

**What inspired you to become involved in IEEE and how has it helped your career?**

As a kid growing up in the 1950's

and 60's I was very interested in the US Space Program. I followed all of the manned flights and even created a booklet from newspaper and magazine articles on each of these flights. My interest continued into my college days, and in 1972 I saw a poster inviting electrical engineering students on a field trip to Houston, Texas to tour the NASA facility. IEEE membership was required to participate, so I joined. This was a great start for me and since then I have continued my active involvement in the IEEE.

My IEEE involvement has helped me tremendously in my professional career. Through IEEE participation I was able to improve my non-technical skills, remain up to date relative to technological changes, and network with other engineers in my local area. As my IEEE responsibilities increased my skills have improved and my networking opportunities have increased. The rewards that I have received from my IEEE participation have greatly exceeded my expectations. I joined to participate in a one day field trip, but it resulted in a 38-year expedition that continues today.

**What advice would you give to young professionals?**

The advice that I always give to young professionals is to build their professional network. This is accomplished in part by active involvement in IEEE. While attending Section and Chapter meetings, GOLD meetings, technical seminars, and conferences, you will meet individuals who

## VOLUNTEER PROFILE

## Joe Lillie

can help you with your professional development and be an asset to you for years to come. In addition, your network must extend outside of IEEE to encompass those areas not covered by IEEE involvement.

A subset of this professional network is what I call the "5 Best Helpers." At some point in our professional career each of us will receive some unpleasant news that our current job has ended. This can be a very emotional time, but we must quickly get over the emotion and move on. To get over the emotion we need to visit with family and close friends, let them know our situation, and ask for their help and support during the difficult times. The next step is to contact the "5 Best Helpers." These five individuals are part of your professional network and these are the folks that will help you find that next job. Contact each of these separately, let them know your situation in a non-emotional manner, and then request their help. Stay in contact with your helpers, pay attention to what they tell you, and follow-up on all suggestions that they present. These contacts are your best chance to find that new job.

The names of your "5 Best Helpers" should be known by you and you only. There is no need to let the five know that they are on your list.

You have a responsibility to yourself and those that depend on your success to be prepared for the unexpected, and if it should occur, to quickly move toward resolution of the situation. Your professional network and your "5 Best Helpers" are a requirement for long term success.

#### What influenced your career decisions?

My parents were a tremendous influence on me and my six brothers and sisters. We were always told that education was very important and that it would open doors for us. Then there was the space program with a goal (set by U S President John F. Kennedy on 25 May 1961) of landing a man on the Moon and returning him safely to the Earth. I was ten years old when this commitment was made but it was a clear goal but with many challenges. The combination of the influence of my parents and the goal of going to the moon drove the need for me to become an engineer. My professional career has all been related to telecommunications but it was the drive to get to the moon that led me to that door.

#### What is the biggest problem facing young engineers?

The biggest problem facing young engineers today is the uncertainty that has been created by this global economic situation. There is uncertainty about the job market and people's long term job potential. With all of this uncertainty we need some

stability, and IEEE can provide that stability. If we stay involved in the IEEE, fully participate in IEEE activities, and build our professional network, we can overcome the uncertainty and achieve our ultimate goal of completing a successful professional technical career.

#### What are your hobbies and interests?

My hobby is collecting items with the Hear No Evil, See No Evil, Speak No Evil Monkeys. I started this collection in 1995 and I currently have almost 800 items with the monkeys. The number of items with these monkeys is unbelievable, and it is a lot of fun looking for more items with this motif. As I have travelled around the world I have been able to add to the collection.

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## PEER-REVIEWED CONTRIBUTIONS

### Four Essential Steps to Preserve Patent Rights

By Bradley Knepper  
Patent Attorney

Patent rights can be critical to fully realizing the value of your hard-earned inventions. However, simple mistakes can cause those patent rights to be lost. Avoid losing your patent rights by taking these essential steps.

#### 1. Know what kinds of public activity can prevent you from getting a patent on your invention

The most common activity taken by inventors that prevents them from patenting their invention is the public disclosure of the invention prior to the filing of a patent application, or for purposes of a U.S. patent, the public disclosure of the invention more than one year prior to filing a patent application. Public disclosure can result from a number of different activities. For example, a description of the invention in a journal article or in marketing materials will be deemed a public disclosure. An article or other written description can also create a patent bar even if it does not appear in what would normally be considered a publication. For example, a public disclosure can include a posting on a web site, or the discussion of an invention or the distribution of a paper disclosing the invention at a conference. Use of the invention in public can also be a public disclosure.

#### 2. Know what kinds of private activity can prevent you from getting a patent on your invention

In the United States, activity that can give rise to a bar to patentability is not limited to public disclosures of the invention. In particular, a sale or offer to sell an invention can create a bar under U.S. law, even if the sale or offer to sell is not publicly known. In general, an offer to sell an invention must be under terms definite enough that the sale would be completed upon acceptance of the offered terms by the would-be purchaser.

#### 3. Determine whether patent rights outside of the United States are important

In general, most countries other than the United States require “absolute novelty” in order to obtain patent rights. This means that the invention cannot have been made publicly known or available prior to the filing of a patent application describing that invention. Therefore, the number one thing to remember if patent rights outside of the United States are desired is to file a patent application for the invention before publicly disclosing that invention. In contrast, a United States patent will not be barred by a previous disclosure, sale, or offer to sell, provided that a suitable patent application is filed within one year of the disclosure, sale, or offer to sell.

#### 4. Know what action to take to preserve your patent rights

As with all matters of a legal nature, you should get competent legal advice if you have questions about whether certain activity has or will create a bar to patentability. This requires making sure your patent counsel knows about any events that have or will occur that may create a bar. By doing so, your patent counsel can make sure that a suitable patent application is filed before a bar is created if protection



outside the United States is desired, or within one year of the activity if patent protection is only desired within the United States. In addition, you should keep in mind that a disclosure of limited portions or aspects of an invention may leave room for patent protection of other, non-disclosed aspects of the invention.

#### Conclusion

Not all inventions will be appropriate for patent protection. However, inventors should understand what activity can destroy their ability to obtain patent rights, to avoid an inadvertent loss of rights. The advice of patent counsel should be sought early on in the development process, to help the inventor preserve patent rights. In addition, even if an inventor suspects that their potential rights in an invention have been compromised, legal assistance should be obtained to determine whether that is in fact the case.

*This article is for informational purposes only, is not meant to convey legal opinions or advice of any kind, and does not establish any form of attorney-client relationship between the reader and the author.*



## PEER-REVIEWED CONTRIBUTIONS

### The Case of Stray Voltage in a Lake

By Donald R. Johnson, P.E.,  
Johnson Engineering

Faulty concentric neutrals on high voltage underground cables was the cause of one drowning death and brain injury to two others while swimming in a lake.

Stray voltage is a popular term resulting from electrical currents flowing through the earth, or other conductive surfaces not normally expected to carry electric currents. Small amounts of electric currents travelling through the earth are prevalent throughout the nation primarily due to electric utilities using the earth as a grounding medium for grounded wye distribution systems. Even though these grounded wye systems do carry a neutral conductor return current path since the neutral conductor is grounded to the earth at multiple locations, (as required by the National Electrical Safety Code (NESC)), the result is the earth is a parallel path for these currents. Typically, depending upon the conductivity of the earth and the amount of return neutral current on the electric distribution system, the amount of current flowing through the earth is small. As electric loads across the nation continue to increase, these earth currents are also increasing.

#### The Scene

Six teenagers were enjoying a cool evening in an outdoor hot tub in a home near a small lake. Several of the teenagers decided to exit the hot tub and run out onto a small dock and jump into the lake.



*Pictured: The dock where the accident occurred*

#### The Accident

The teenagers were swimming near the dock for several minutes when they began to notice electric currents flowing through their bodies. One boy who experienced the phenomena at the site describes the currents as causing him to lose muscle control such that he could no longer swim and he began sinking in the water. Shortly thereafter adults began rescuing the teenagers. Three of the teenagers were taken to the hospital. The outcome was that one boy drowned and another boy and girl received brain damage due to lack of oxygen caused by near-drowning.

#### The Investigation

I determined through an investigation that the electric utility in the area had major corrosion problems with the bare concentric neutrals of their high voltage underground cables that were buried under and around the lake where the accident occurred.

Various testing methods were used to test for the stray currents, and for the resulting stray voltages, at numerous locations around the lake and dock area with electric sources other than the electric utility isolated or disconnected. The highest currents measured during this test period reached .5 amperes and the highest voltage reached 6.2 volts (both at 60 Hz) using a 500-ohm shunt resistor in the voltage testing circuit.

These tests along with other testing indicated that several sections of underground cable around the lake and dock were



*Pictured: Normal Underground Cables with Good Concentric Neutrals*



*Pictured: Underground Cables with Corroded Concentric Neutrals*

lacking a concentric neutral return path as a result of corrosion.

#### The Conclusion

Using an assumed human body resistance of 300 ohms<sup>1</sup> when immersed in fresh water and assuming a current range through the human body where muscle control is lost in the range of 6 to 30 milliamperes<sup>2</sup>, using Ohm's law, the voltage necessary to cause a drowning in fresh water is in the range of 1.8 to 9 volts, 60 Hz AC. The above testing results show that the necessary voltage and current levels were at a level well within the range to cause the drowning and near-drowning of the victims of this case.

This case shows the dramatic effects of stray voltage especially in an area where people are exposed to stray voltages when in a wet environment. Electric utilities must be vigilant in maintaining their distribution systems such that stray voltages are kept at extremely low levels so that humans and animals alike are not exposed to these dangers.

1. "Stray Voltages – Concerns, Analysis and Mitigation" National Electric Energy Testing Research & Applications Center (NEETRAC) Manual Project Number 00-092, August 2002, Page 5-24.

2. [http://www.osha.gov/SLTC/etools/construction/electrical\\_incidents/electcurrent.html](http://www.osha.gov/SLTC/etools/construction/electrical_incidents/electcurrent.html)

## PEER-REVIEWED CONTRIBUTIONS

### Technology cannot sell itself!

By Christopher Magnan  
IEEE Student Member

If the article's title was false, then most likely, the Forbes 400 would be populated by the scientists and engineers whose inventions changed our lives<sup>1</sup>. Technology commercialization can be very complicated since non-technical competencies (such as marketing and strategy) also make a contribution. This article will briefly discuss the initial stages in technology commercialization: market definition, market entry, value proposition, and adoption strategy. These concepts are explored in greater depth in business schools, academic journals, and books. It is recommended that anyone interested in technology commercialization should read the literature available on this topic.

Choosing the commercialized technology's market is the most critical stage, because it defines the direction for the technology commercialization. The optimum market must be able to show opportunity for significant growth, have little or no entry barriers, and little or no competition. This market data can be acquired through investment banks and analysts such as Goldman Sachs or Bloomberg. In addition, a technology can also be commercialized for multiple markets; some markets have more opportunity than others. For example, a firm that developed a cleantech pool heater chose residential pools as its initial market. However, the client base is very fragmented since residential pool installation is localized. If this firm targeted a

national hotel chain, not only could the hotel chain provide sustainable revenue in the short term, it could also provide national credibility. Choosing the market develops the potential competitive advantage and entry strategy.

There are many questions that must be answered when determining the competitive advantage and entry strategy. Does the technology represent a paradigm shift to what is currently available? Who are the current players and what will they do when a new player enters the market? How will new entrants overcome entry barriers? Government regulation may also play a role in the market. For example, the federal government provides subsidies for technology development under the Stimulus Act<sup>2</sup>. In addition, many sectors, such as pharmaceuticals, are government regulated to protect consumers from harm. It is also possible to find a unique market niche that straddles multiple traditional markets. A common case taught in MBA courses is Southwest Airlines. Even though it is an airline that competes with the traditional airline carriers, it also competes with trains, buses, and automobiles, since Southwest developed short-haul point-to-point routes, which differ from the traditional airline's hub-and-spoke routes<sup>3</sup>.

After assessing the competition, the entrepreneur must define the value proposition. In other words, how is your potential customer better off by purchasing your product or service? Is the product service faster, cheaper, more efficient, or does it address a pain point that has not been resolved. A pain point is the need or problem experienced by potential customers. Identity theft and energy costs are common pain points experienced by many today. Also, inherent in the value proposition is

what the customer is also giving up. For example, adopting a new software package requires training, a transitional phase or learning curve, transfer (or loss) of legacy data and files to the new software's file format, absorbing the cost of removing the old software from the network. Consumers tend to rationalize these variables when they potentially adopt new technologies.

Finally, the customers must be convinced that they are better off with the new technology. Simply telling customers that they will be better off is not enough. This added value must be expressed in a way that appeals to the customers' needs or desires and can either be hedonic, i.e., maintaining a certain lifestyle or image or necessary, i.e., the technology will make people's lives easier. However, the message may have different meanings to different people; unfortunately, people have different values based on their culture, environment, and education. Many free web-based survey tools can be used to verify that your message and product appeals to your customer base.

To conclude, the technology is only a small factor when commercializing it. The entrepreneur(s) needs to define the technology's niche, assess market potential and risk, potential appeal, and the message to customers. Holistically, these concepts define the positioning strategy in a business plan; the business plan is necessary when raising external capital.

1. <http://www.forbes.com/wealth/forbes-400/>, The Forbes 400, Forbes Magazine, Retrieved 11/05/2010
2. 115 United States Congress, American Recovery and Reinvestment Act of 2009, Public Law 115-1, February 17, 2009
3. O'Reilly, C., Pfeffer J., "Southwest Airlines", Stanford School of Business, Case HR-1A, April 5, 2006

## PEER-REVIEWED CONTRIBUTIONS

### Cryptography in the Dawn of IPv6...

By Harris Michail, PhD  
IEEE Member

2010 is considered as the year of IPv6<sup>1</sup> adoption worldwide. This is due to many reasons, the most fancy of which is what was reported as one of the top web trends of 2009 under the concept of "Internet of Things". In the last decade, a massive adoption of e-transactions has occurred leading to a boost of potential new "networked" applications and devices that can make our life easier. Our near future is designated with Internet devices such as smart tags in shops, factories and airports, intelligent heating and lighting systems, and in-car networks and navigation systems.

However, this means a thousand-fold increase in demand for IP addresses calling for mass migration to IPv6, which is able to handle the arising issue of an IP address shortage. The existing pool of 4 billion IP addresses provided by IPv4 is expected to be exhausted by 2011. The importance of this situation is also highlighted by the fact that on May 2008, European Commission set the target of getting at least a quarter of EU industry, public authorities and households to switch to IPv6 in 2010. This is also true for the USA, Japan and Republic of China with similar initiatives in progress.

But IPv6 has much more to offer, since it will enable the Internet to provide services with guaranteed QoS<sup>2</sup> (Quality of Service), through two QoS-related fields that exist in IPv6 header. Enabling QoS in IPv6 will give a tremendous boost to services over Internet under subscription for users who are willing to pay for increased quality of service.

However, one of the most crucial features that is incorporated into IPv6 is the indispensable security protocol IPSec, which offers security services in every transmitted data packet in a network. IPSec is securing transmitted data via an Authentication Header (AH) or Encapsulating Security Payload (ESP) which are the two main wire-level protocols, for authentication (AH) and encryption and authentication (ESP) respectively. Authentication which takes place both in AH and ESP is performed with the usage of a cryptographic hash function. For ESP, encryption is also required and performed, using a cryptographic cipher block algorithm.

The aforementioned fact highlights the importance of hash functions and cipher blocks cryptographic algorithms in the near future. Hash functions  $H(M)$  is a transformation that takes an input message  $M$  and returns a fixed-size string, which is called the hash value  $b$  (that is,  $b = H(M)$ ). One can think of the hash value as a small and unique "digital fingerprint" of the larger document. On the other hand a block cipher is an algorithm that transforms an input message  $M$  (plaintext) to an encrypted message of the same length  $C$  (ciphertext) which is unreadable. Only the intended receiver of the message can take the received ciphertext  $C$  and transform it through the process of decryption to the initial input message  $M$  (plaintext).

The million dollar question is whether existing designs and implementations of these algorithms can handle and offer security services to all this network traffic. A great deal of research is being conducted on hardware designs and implementations of hash functions and cipher blocks and further on their optimization towards increased performance.



*Harris E. Michail, PhD is a Senior Researcher of Electrical and Computer Engineering Department, of the University of Patras, Greece.*

Hardware designs can provide increased performance with higher throughputs compared to software implementations. However just hardware designs cannot bridge the gap to the necessary throughput that will be essential in the near future. For this reason, many researchers focusing either on block cipher algorithms or in hash functions during the last years have started incorporating sophisticated optimizing techniques.

The status up to now is that as long as cipher blocks are concerned, there are AES (the most widely used cipher block) hardware designs that exceed 70 Gbps throughput when most competitive designs and implementations of hash functions achieve about 5 Gbps of throughput with lower operating frequencies.

This illustrates the fact that in IPSec security scheme where both an authentication and an encryption module are used, it is the hash function that sets the upper limit of achieved throughput and much more research work has to be performed for their optimization in the near future, if we are to efficiently adopt IPv6.

1. Further reading: <http://en.wikipedia.org/wiki/IPv6>

2. Further reading: [http://en.wikipedia.org/wiki/Quality\\_of\\_service](http://en.wikipedia.org/wiki/Quality_of_service)



## IEEE GOLD AFFINITY GROUP PROFILE

## Finland GOLD

## FAST FACTS

**Date Founded:** September 2005

**Chairperson:** Rafal Sliz

**Committee Members:**

Rafal Sliz, Chibuzor Eneh, Francescantonio Della Rosa

## History

The IEEE GOLD Finland Affinity Group was founded in September 2005 by Kimmo Kansanen and Mika Ylianttila, and has been gaining momentum ever since. In Fall 2008 with the arrival of Maciej Borkowski as Activity Chair, our group has assumed an active role in organizing events and planning activities. Since then, our core activities focus on developing hard skills by arranging lectures from professors on various topics, coordinating networking events to connect specialists from different fields, and establishing and maintaining contact with various industry partners.

## Events

Details concerning our events can be found on the News and Activities section of our webpage at <http://www.ieeegoldfinland.org>. We have organized a wide variety of events since last fall. The IEEE Grand Challenge Workshop Seminar was a joint effort arranged in cooperation with

Infotech Oulu and the IEEE Student Branch. It was held at an idyllic cabin by a river near a golf course (covered with snow around this time of the year) at Sanginjoki in Oulu, Northern Finland. The focus was on integrating knowledge from different fields of technology, mainly by practicing innovations on this basis in small groups. The not-so-formal part consisted of enjoying the traditional Finnish sauna and the lovely outdoors.

Members were recruited later in the year at a social dinner outing which also involved sauna. In May 2010 two professors gave lectures on cognitive networks and spectrum sharing at the IEEE GOLD Professional Telecommunication Lectures. This fall, our GOLD group set a goal to gain more visibility, which we achieved by attending Vulcanalia: a day for guilds and associations at the University of Oulu. We reserved a central location and attracted the attention of people with candy, various promotional pamphlets about IEEE, and a 50" wide screen running promotional videos. Furthermore, we witnessed the slight re-engineering of an age old saying "curiosity killed the cat" to "curiosity destroyed the helicopter" during IEEE Day, as the attention of the University of Oulu was directed mostly on us for 4 hours.

## Interesting Facts

This year, IEEE GOLD Finland established a new section in the Tampere University of Technology - Tampere is a city about an hour and a half's drive north of



Helsinki, the capital. The Tampere section continues to become more active.

## Initiatives

We are currently planning a STEP event for next week – a workshop geared towards developing professional presenting skills. It will be attended by many representatives from industry, researchers, and students. The purposes are to learn about the different aspects of delivering a presentation and to gain more experience by practicing these skills. We also plan to make the city of Oulu an IEEE city, by helping to arrange events on a municipal scale. Also coming up in our program for the spring are Entrepreneurship Days, where presenters will discuss key steps in the entrepreneurship process.

## IEEE SOCIETY PROFILE

## IEEE Vehicular Technology Society

The IEEE Vehicular Technology Society (VTS) is one of nearly 40 technical societies in the IEEE. It exists to serve members who are interested in mobile communications, land transportation, and electrical aspects of vehicles such as hybrid/electric drive. Membership in this society is very inexpensive and it includes a subscription to the Vehicular Technology Magazine as well as discounts on conferences.

There are a variety of educational offerings available from the VTS. The IEEE eLearning Library includes hour-long courses on many topics including, wireless ad-hoc networks and OFDM (a means of modulating wireless communications). The society also sponsored hybrid vehicle courses which members can access at no cost.

The Vehicular Technology Magazine is a fascinating read, covering the latest technological advances and news from around the world. You can read about the latest deployments of 4G mobile phone technology, high speed rail lines, wireless communication standards, and automotive electronics. The insider perspective in these articles is refreshing. The authors are extremely well educated and

experienced in their field. The editor, Charles Backof, is a highly regarded retiree of Motorola and the entire editorial staff is comprised of professors and industry leaders. While some technical magazines will overwhelm the reader with equations and footnotes, this publication promotes an easy to read style that preserves the technical merit of the articles.

The society hosts the Vehicular Technology Conference (VTC) twice a year. In 2011 this conference will be held in Budapest in May and San Francisco in September. The San Francisco VTC will be extra special because it will be co-located with another VTS event, the 4<sup>th</sup> International Symposium on Wireless Vehicular Communications (WIVEC). GOLD members are always in attendance at VTCs, both as graduate students and as industry professionals. The food is always good, the papers are fantastic, and you can expect to meet and share ideas with dozens of interesting people.

The same can be said of another VTS event, the Vehicular Power and Propulsion Conference (VPPC). This event is co-sponsored along with the IEEE Power Electronics Society (PELS) and will be in Chicago in September 2011. This is a newer conference, (only 6 years old), and they have consistently gone from strength to strength each year. If these events are not for you, then you can try another cosponsored conference, the Joint Rail Conference (JRC), to be held in Pueblo, Colorado in

March 2011.

There are many local chapters for VTS, with a global reach across North America, Europe, and Asia. You can check the VTS website for a chapter near you. Even if there is no chapter in your area, VTS is creating "virtual chapter meetings" where people can log on from anywhere in the world to meet and engage others in their field. Even better, you can start a chapter in your area to bring people together and compete for the best chapter award.

The VTS also sponsors two fellowships for graduate study in the area of vehicular technology as well as a host of other awards for conference papers and technical contributions to the field. Nominations for these awards are accepted on a regular basis.

The VTS is run by an elected, all-volunteer board of governors, including an appointed GOLD Liaison. The board meets three times a year, two of which are at the Vehicular Technology Conferences. They are responsible for overseeing the conferences, publications, educational materials, and other business relating to the society. The board delegates many items to committees that contain more volunteers. Like many IEEE boards and committees, there are very few restrictions on who can attend VTS board and committee meetings – a fact that sets VTS and IEEE apart from many other organizations in the world.

## NOTICES

### IEEE Humanitarian Technology Webinars

The IEEE is pleased to have launched a series of free, publicly available humanitarian technology webinars. Motivated by IEEE's core purpose to foster technological innovation and excellence for the benefit of humanity, this powerfully engaging webinar series is focused on applying technology to solve the world's most pressing humanitarian and development challenges. Webinars are presented by renowned individuals in the field, and highlight new technologies, business models, and social entrepreneurship initiatives that help improve the livelihoods of the underprivileged. Focusing on the four major infrastructural needs for development (water, energy, transport and communication) and a variety of application areas (health, education, agriculture and innovation), the IEEE hopes to stimulate the growth of a worldwide community that places priority on developing technology for sustainable human prosperity.

The next webinar topic is "Innovation and Entrepreneurship within the Tech Community in Nairobi," presented by Jessica Colaco, iHub, Kenya.

The webinar will take place on **19 January 2011 at 15:00 GMT, 10:00 EST**. Find out more and pre-register to attend by going to <http://humanitarian.ieee-elearning.org>.

A recording of the previous webinar, "Mobile Web Technologies for the Developing World" by Max Froumentin of the World Wide Web Foundation is available for viewing at <http://humanitarian.ieee-elearning.org>.

### Worldwide GOLD Summit

The 2011 IEEE GOLD Summit is to be held prior the August 2011 IEEE Sections Congress in San Francisco, California. The 2011 GOLD Summit is the 2nd tri-annual gathering of GOLD volunteers from around the globe. Just as IEEE Sections Congress provides IEEE Section leadership with an opportunity to impact the future of IEEE, the IEEE GOLD Summit provides GOLD volunteers from around the world the opportunity to impact the future of IEEE GOLD. At the meeting, GOLD members will attend working group sessions, receive professional development training, build their professional network and celebrate GOLD achievements. If you are interested in helping to plan the GOLD Summit please contact [brian.roberts@ieee.org](mailto:brian.roberts@ieee.org)



### Call for Papers - IEEE Global Humanitarian Technology Conference (GHTC)

On behalf of the IEEE Global Humanitarian Technology Conference 2011 Organizing Committee, we are pleased to invite you to participate in the program for GHTC 2011!

GHTC 2011 is the first annual conference designed to gather together scientists, engineers, technology professionals, academics, foundations, government and non-government organizations, and individuals engaged in humanitarian work to discuss and develop solutions for present and future humanitarian needs. Being an international conference, we anticipate participants from all over the world to attend a program of invited talks, technical sessions, tutorials, exhibits, networking, and social activities.



## NOTICES

### Call for Papers - IEEE Global Humanitarian Technology conference (GHTC) (continued)

Participation in GHTC 2011 is open to all technologists or organizations interested in applying technology to humanitarian goals and to non-technical individuals and organizations interested in learning about the application of technology to humanitarian challenges.

Following the Conference theme of "Technology for the benefit of humanity", topics include but are not limited to:

- Health, Medical Technology and Telemedicine.
- Disaster Warning/Response.
- Water Planning, Availability and Quality.
- Power for Off-Grid Users.
- Power Infrastructure/ Renewable/ Sustainable Energy.
- Connectivity and Communications Technologies (data/voice) for Remote Locations.
- Educational Technologies.
- Agricultural Technologies.

More information on technical sessions, registration for the conference, and hotel reservations is available on the GHTC 2011 website <http://www.ieeeghtc.org/>.

A Conference Proceedings of the accepted papers that have been presented at the symposium will be published and included in IEEE Xplore. Electronic media containing all accepted GHTC 2011 submissions would be distributed to registered attendees.

Submission – **Deadline is March 11, 2011**

All submissions must be done online. Log in to <http://www.ieeeghtc.org/> for instructions and submissions.

- All submissions must be written in English. Submissions must not be longer than 4 pages. Submissions over 4 pages will not be considered.
- Minimum font is 10 point, single-spaced, and submissions may include figures, illustrations, and graphs.
- Notification of acceptance will be sent via email only, and posted on the website. Authors of unaccepted submissions will be notified by email.
- Authors of accepted papers will have an opportunity to revise their submissions for inclusion in the electronic media until August 7, 2011.

For more information email:

[ieeeghtc@ieee.org](mailto:ieeeghtc@ieee.org)

### GOLD Affinity Group Hall of Fame Awards

IEEE recently realized the need to create an award to recognize outstanding work performed by GOLD Affinity groups rather than just individuals. Hence the IEEE GOLD Affinity Groups Hall of Fame award was born. This award will recognize outstanding GOLD Affinity Groups that play a big role in helping their members succeed.

In 2011, the GOLD Affinity Groups Hall of Fame will be launched to recognize the most outstanding Affinity Groups from 2010 and will continue on as an annual award after that. Three outstanding GOLD Affinity Groups will be recognized every year and be added to the GOLD Affinity Groups Hall of Fame (website to

be launched). The GOLD Affinity Groups Hall of Fame website will highlight the activities/programs that the GOLD Affinity Groups did to be successful and be a valuable resource to IEEE members so that other GOLD Affinity Groups might benefit from those activity ideas as well. The three winning Affinity Groups will also be given \$500 to spend on GOLD activities in their section and a plaque.

Several criteria will be used to judge the winners every year. The Affinity Groups should have reported their activities to IEEE using L-31 reporting or vTools in a timely manner. The Affinity Groups will also be judged on the number of activities they held, the variety of activities they offered (social, technical, professional, etc.), any new and creative activities they held, and the number of members that attended the activities relative to section size. In addition, the ability of the GOLD Affinity Group to retain and get more members will be judged. The Affinity Group would have to demonstrate that it is sustainable; the Affinity Groups will be judged based on its volunteer recruitment and timely officer reporting. It is important to remember that all Affinity Groups will be judged equally regardless of their size and how long they have been in existence. To get more information on this award, please contact your regional coordinator.

The nominations for this award can only be made by regional GOLD coordinators and up to 3 GOLD Affinity Groups can be nominated per region. Please ensure that your regional GOLD coordinator is aware of the details of the activities that your Affinity Group has been doing. The nomination deadline is February 15th annually and the winners will be announced in early May.

## NOTICES

## Call for Articles: GOLDRush March Edition

IEEE GOLDRush invites you to submit an article for publication in the March 2011 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](mailto:GOLDRush@ieee.org) on or before 5 February 2011. 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.html>

*Make the most of this great opportunity to express your ideas!*

## Upcoming GOLD Webinars

**IEEE Code of Ethics, Ethical Challenges in the Engineering Professions**  
Presented by Elya Joffe

As engineers, we have responsibilities to society, our employers, our clients, our professional colleagues and ourselves. Each and every one of us is faced by ethical challenges on a daily basis, often - without even being aware of it.

This presentation addresses the concept of ethics and conduct, with special emphasis on ethics in the engineering profession. The need for codes of ethics and the content of the IEEE code of ethics is discussed in detail. This includes a discussion of global ethics issues and the role IEEE plays as a transnational organization. The presentation also discusses relevant engineering case studies. Learn to recognize

the factors that can lead to ethical problems, the steps to making ethical decisions, and the positive outcomes of ethical behavior.

Webinar Date: 17 December 2010, 9:00 - 10:30 am EST

Register: <http://icm3.ieee.org/eventmanager/onlineRegistration.asp?eventcode=h15>



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