

Fostering technological innovation and excellence for the benefit of humanity.

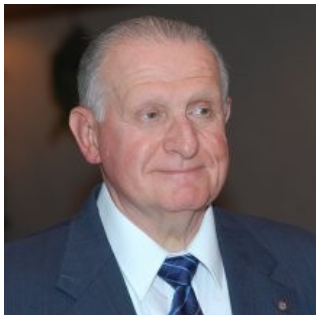
THE JULY 2008 IEEE NEW HAMPSHIRE SECTION NEWSLETTER

http://ewh.ieee.org/r1/new_hampshire/newsletters.html

Chairman's Thoughts

By Jim Anderson

james-w-anderson@ieee.org



Innovation

Last month Nita Patel wrote an interesting article on Innovation. I had never considered that I was an innovator. I always thought that innovators were people with lightning bolts flashing

around their heads and could leap tall buildings. It turns out that I am a Modifying Innovator. If you did not read the article yet, check it out and determine which of the four types of innovators best describes you.

I recently ran across an interesting article "Unleashing Creativity" by the late Paul B. MacCready of AeroVironment, Inc. Even though the article is from 1995 it still contains a lot of good ideas. You can read the article at: http://invention.smithsonian.org/resources/online_articles_detail.aspx?id=349 Who knows, it may get your innovative juices flowing. The Lemelson Center for the Study of Invention and Innovation has a lot of other interesting material at:

<http://invention.smithsonian.org/home/> They are part of the Smithsonian Institute.

Now that your innovation juices are flowing you should read the article "Introduction to the Grand Challenges for Engineering" at: <http://www.engineeringchallenges.org/cms/8996/9221.aspx> A panel of 18 engineers, technologists and futurists including Google co-founder Larry Page and genomics pioneer J. Craig Venter spent more than a year pondering how best to improve life on earth and came up with 14 Grand Engineering Challenges. The order of list below is based on the votes of 24,586 people who have read the article so far.

1. Make solar energy economical
2. Provide energy from fusion
3. Provide access to clean water
4. Reverse-engineer the brain
5. Advance personalized learning
6. Develop carbon sequestration methods
7. Restore and improve urban infrastructure
8. Engineer the tools of scientific discovery
9. Advance health informatics
10. Prevent nuclear terror
11. Engineer better medicines
12. Enhance virtual reality
13. Manage the nitrogen cycle
14. Secure cyberspace

This summer, while you are relaxing at the beach or enjoying nature in the mountains, start day-dreaming about one of the 14 Grand Challenges and see what you come up with. Feel free to share your insights with us next September.

George Bernard Shaw got close when he said "Some men see things as they are and say, 'Why?' Others dream of things that never were and say, 'Why not?'"

Help Us Grow!

Unfortunately, we had no volunteers so far in June.

We are still in need of a Webmaster. This could be done in one of four ways. 1- Just the monthly updates. 2- Incremental revisions to the layout of the website. 3- Complete website redesign. 4- Or any combination of the above.

Please contact me to discuss this further if you think that you might be interested in lending me a hand.

Feedback

Contact me if you have any comments about, or suggestions for, the newsletter or the Section.

In This Issue

Chairman's Thoughts



This month I piggyback on Nita Patel's June article on innovation. This summer see if you can solve one of the 14 Grand Challenges for Engineering. We are still looking for help with our

website.

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Take Me Out to the Ball Game



The deadline for reserving tickets has been extended to Saturday July 12, but we are limited to the first 120 people. The Fisher Cats game is on Sunday, July 20.

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Accidental Engineer



This month Jim Isak shares with us an entertaining story on how he got involved in engineering. If you would like to share your story with us please contact the Editor.

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Chapter and Group News

Computer Society



Jim Isak announces the theme for the Computers and Information Technology Seminars for the Fall and a seminar in the Conway area

and in the Hanover area.

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Joint Com-Sig Society



Ravi Subrahmanyam and Kenric Nelson remind us about the meeting co-sponsored by the MTT-S

Chapter that will be on Thursday, June 26, at 6 PM, at the BAE Nashua Headquarters Auditorium. Jian Yang will speak on "Designing for Yield in Advanced RFICs - Tools for Success".

Please support us by posting the meeting notice at work or school.

http://ewh.ieee.org/r1/new_hampshire/Docs/2008-06-COM.pdf

Microwave Theory and Techniques



Tom Perkins reminds us that MTT-S is co-sponsoring the 6/26 meeting above with the Joint Com-Sig Chapter.

Systems Council



Kenric Nelson reports on the possibility of forming a chapter of the Systems Council to service our members who belong to one or more of the 14 member societies.

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WIE New Hampshire News



This month WIE Vice Chair Jennifer Schelly shares a brief report about the April Wie-GOLD Conference in Teaneck NJ.

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Other Chapter Contact Information

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Pre-University Activities



Don Sherwood reports on senior project presentations at Milford High School's regional Applied Technology Center. Please consider volunteering as a mentor, a speaker, or arrange for job shadowing and internships.

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Student Activities

Summer Vacation



Nita Patel shares some thoughts for what to do during your summer vacation to keep your mind sharp.

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Nashua Community College



Barbara Bancroft announces that there are still a few NSF scholarships available. She discusses the Computer Chapter seminars, curriculum changes at NCC, and the place of community colleges in four or more years of education.

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Other Articles

2008 Young Engineer Award



Dean Bacon, Awards Committee Chair, reminds us about the call for nominations for the 2008 Outstanding Young Engineer Award for engineers 35 or younger as of January 1, 2008. The nomination deadline is October 8, 2008.

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Big Audacious Goal



Nita Patel, a member of the Region 1 Strategic Planning Committee, reports on the IEEE's core purpose: To foster technological innovation and excellence for the benefit of humanity. (Page 9)

NH Joint Engineering Societies Conference



Tom Perkins reminds us about the conference, "A Symposium on Green Energy Applications" on Th., October 9, 2008. For the meeting notice with all the details see:

http://ewh.ieee.org/r1/new_hampshire/Docs/2008-04-NHJES.pdf

Please support us by posting the meeting notice at work or school.

When NOT To Patent!



Nita Patel reviews six basic questions to ask yourself to know whether or not you should file a patent. (Page 10)



Membership Activities



Stuart H. MacPherson reminds us about retirement options and how to become a Senior Member. (Page 12)

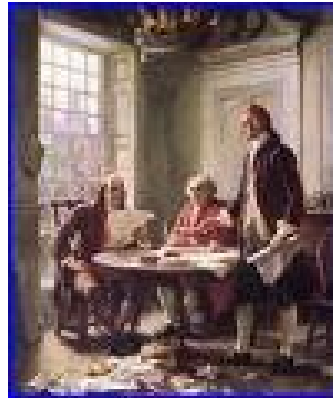
2008 IEEE Humanitarian Workshop



The IEEE Region 1 GOLD Coordinator, Uri Moszkowicz, is organizing a workshop, "Humanitarian projects through the lens of engineering" on Saturday, August 23, 2008. Tentative plans are to hold it at Boston University, One Sherborn Street. (Page 12)

Please support them by posting the meeting notice below at work or school.

http://ewh.ieee.org/r1/new_hampshire/Docs/2008-06-Hum.pdf



Other Meetings of Interest (Page 13)

WANTED

We need additional Section Photographers, and "How I Became interested in Engineering" articles. (Page 14)

Questions and Answers (Page 14)



Take Me Out to the Ball Game

By Don Sherwood

donsherwood@ieee.org



Make plans to attend this year's summer outing where we will watch the New Hampshire Fisher Cats play the New Britain Rock Cats on **Sunday**, July 20th at the new Merchant's Auto Stadium in Manchester, NH.

The game starts at 1:05 PM, but plan to arrive early to enjoy the amenities of a Dinner at the Den Buffet. Tickets include the game along with the following:

- 90 Minute all-you-can-eat buffet beginning 30 minutes prior to the scheduled game time. Ice Tea and Fruit Punch are included in the buffet.
- The menu includes Steak Tips, Italian Sausages, Hamburgers, Hot Dogs, Tossed Garden Salad, Boston Baked Beans, Cookies, Watermelon, Fruit Punch and Lemonade.
- Make sure to bring your glove because you might catch a home run ball!
- Visit the new Samuel Adams Bar and Grill right next to the den, which opened this April.
- PLUS, you can be part of the 100 Club! Take your food over to Section 100 to enjoy the game.



A Fisher Cats Home Game



Dinner at the Den

Tickets prices for members / student members and their immediate family or significant other are just \$10 for adults and \$8 for children (4yrs to 12 yrs), with a maximum family cost of \$50. Ticket prices for non-members are \$27 for adults and \$24 for children. We can only accommodate 150

people so make your reservations early.

The deadline for reserving tickets has been extended to Saturday July 12, but we are limited to the first 120 people. Get your tickets while the supply lasts. Make your reservations by contacting Donna Davis at NHIEEE@aol.com.

Send checks to:
Donna Davis, Administrative Assistant
34 Cohas Drive, Auburn, NH 03032.

Accidental Engineer (Or how I became an engineer and learned to like it.)

By Jim Isaak

CS2010@JimIsaak.com



Our illustrious section chair has asked us to share our 'engineering' stories with the section, so here is mine.

You would think being the son of an Electrical Engineer (even an IEEE member) might have influenced my career decision. No doubt it did. Dad was the type of engineer who would take anything apart and try to fix it. He was highly disappointed when his last "no computers inside" car was towed off since he could no longer pop open the hood, figure out what was wrong, and fix it with bailing wire or duct tape - ending a 248,355 mile relationship. Needless to say I grew up with a screwdriver and soldering iron.

But that was not how I entered the engineering

domain. I did all right at math and science (lots of science fair projects and such). When I went to Stanford, I took a variety of courses (from criminal law to human sexuality). The course that inspired my passion was an introduction to programming class taught by our dorm advisor, David Gries. He convinced me to take it, and I was hooked. At the time there was no undergraduate major in computer science, but Stanford did offer a "create your own major" program, aka "Interdisciplinary Studies". So I picked a selection of both technical courses (CS and EE) as well as related courses (Logic, operations research, and telecommunications policy); and that would have been it, if it were not for that thing called Viet Nam.

We owe both thanks and apologies to our troops who served in Viet Nam. We blamed them for disagreements with the government we elected who managed that war. However, I preferred not to head in that direction, and being an undergraduate was sufficient for a deferment. Stanford had a co-terminal degree program, which allowed you to remain an under grad while earning your masters. I wanted to go for Computer Science, but that program was only open for PhD's, so I ended up EE-Computer Engineering instead.

No doubt you might hope my decision to join IEEE was more deliberate. By the time I was a senior in college I was married with one child headed our way (remember, I did take that course). I also took a course in life insurance (Stanford had a great variety of classes); and determined that I needed some. After some comparison shopping, and a related article in Consumer Reports, I determined that IEEE life insurance was the best option. So I joined IEEE, and grabbed a policy. There is this vague rumor that people join IEEE

for the life insurance; I am at least one example. (EDITORS NOTE: I read that same Consumer Reports article.)

I did remain a member and found IEEE, the Computer Society, and the Society for the Social Implications of Technology all to have interesting stuff.

Working for a small company building Motorola 68000 based computers with an operating system like UNIX, I got involved in an effort to standardize an operating system. We heard IEEE had a project like that so as an IEEE member I offered to research what they were doing. The problem with asking questions is sometimes you end up in charge. I found myself as chair of the IEEE operating systems standards committee, with the intention of either aligning it with the efforts of /usr/grp (which initiated that effort) or killing the IEEE project. After some discussion we decided to move into IEEE, and formed the POSIX standards committee. While that effort yielded some eighty billion dollars of market growth in the UNIX based systems market, that was not the real reward of the effort.

In the standards activities I found volunteer involvement in IEEE took on a life of it's own. A group of us, which expanded to over five hundred at it's peak, met four times a year for a week in some nameless location, the inside of a conference room in Hawaii is the same as the one in Kansas City. We got to know each other, and developed a strong professional network. This network has outlived our individual involvement with any one employer, or any specific standard. It has provided me with education, friendship, job opportunities, international travel, speaking invitations and the list goes on.

Oh yes; I found that engineers really do innovate, they find solutions - and when we get together to discuss these solutions via standards, conferences, collaborative research and such, it can be very rewarding.

My one suggestion is that you find paths to get involved with the profession: section activities, standards, conferences, speaking at a chapter meeting, mentoring a student, working with pre-college kids, whatever. The benefits are excellent - and you don't have to quit your day job!

(EDITORS NOTE: Jim is a past member of the IEEE Board of Directors, and a candidate for the IEEE Computer Society President Elect.)

Chapter and Group News

Computer Society

By *Jim Isaak*

CS2010@JimIsaak.com



Call for Speakers

The Computer Society will be starting up its Computers and Information Technology Seminars in the Fall with a focus on the 'Computing Profession in 2012'. If you have suggestions for speakers, or wish to speak, please contact Barbara Bancroft

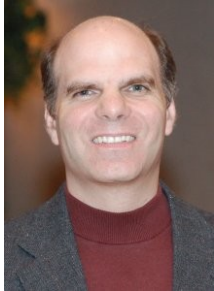
(email) or Jim Isaak (CS2010@JimIsaak.com) - we are targeting Tuesday noons at Nashua Community College and Tuesday evenings at Southern NH University in Manchester. We are also planning a seminar in the Conway area and in the Hanover area. Ideal topics would look at skills needed

(software, hardware, systems) or a view towards what will be key considerations in web design, social networks, Twitter 2.0, NextLife, as well as security, privacy, etc. Feel free to send us specific topic ideas and folks you would like to have come to NH to address them. We will try to make it happen.

Systems Council

By *Kenric Nelson*

kenric.nelson@ieee.org



Technical councils are groups of societies working together in broad areas of technology. Councils sponsor activities which benefit individuals in all of the member Societies.

The Systems Council is beginning to support local chapters. This might be an attractive

new chapter for the section. Providing local support for the many different societies in the council is difficult to sustain due to the small number of NH members in most of the member societies. The summary below includes a list of the societies in the council. If you are a member of one or more of these societies and would be interested in supporting the formation of a local Systems Chapter, please contact me.

The Systems Council integrates activities regarding aspects of multiple disciplines and specialty areas associated with the engineering of systems. This council covers, but is not limited to the following:

- Systems engineering, education, standards, processes and methodologies
- Modeling, simulation and integration related to design, testing, production and support
- Design aspects for robust design, human fac-

tors, safety, security and usability

- Transition of products from design to production, deployment and use
- Quality control and system management
- Program/product/project management interactions
- Risk management
- Systems architecture

Current Member Societies:

- Aerospace and Electronic Systems
- Circuits and Systems
- Communications
- Computational Intelligence
- Computer
- Control Systems
- Instrumentation and Measurement
- Microwave Theory and Techniques
- Oceanic Engineering
- Power Electronics
- Product Safety Engineering
- Reliability
- Robotics and Automation
- Systems, Man and Cybernetics

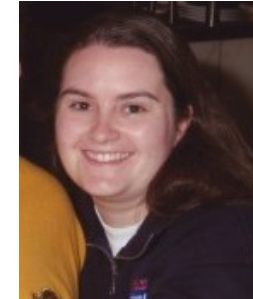
History:

- Systems Council developed in 2005
- First publication of Systems Journal in 2007
- Sponsored conferences in 2007 and 2008
- In 2006 IEEE authorized Technical Councils to form local chapters
- First Systems Chapter was joint with AES in Connecticut
- Approximately 6 system chapters are in some stage of development around the country
- Recent minutes stress concentrating on a 'system-of-systems' perspective which integrates many disciplines. The charter includes the intention to never become a society, but to facilitate collaboration between the societies and to add value to them.

WIE New Hampshire News

By *Jennifer Schelly*

Jennifer.Schelly@baesystems.com



In April IEEE sponsored me to attend the Region 1 WIE-GOLD conference in Teaneck, NJ. The conference included WIE training, leadership speakers, and a chance to meet, network with, and swap ideas with other Region 1 GOLD and WIE section leaders. The

training was conducted by Uri Moszkowicz (Boston GOLD) and Darlene Rivera (NY WIE), who are the Region 1 GOLD and WIE Coordinators respectively. Training included information on:

- Using and maintaining a wiki
- Using list serves
- Applying for special funding
- Applying for awards
- How to submit items of national interest

The leadership and profession development seminars included a terrific talk by Dr. Gregory Olsen about his time on the Space Station, and professional speakers on Professional Development, Starting Your Own Company, and Tips on Careers in Engineering/Science". If you'd like more information on the conference or ideas generated there, please contact me.

IEEE Women in Engineering (WIE) is dedicated to important issues for Women Engineers. Affinity groups provide the opportunity for members to network at a local level. All members (male and female) are encouraged to join and participate in their local group activities to promote growth

within the WIE. For more information go to:
<http://www.ieee.org/go/nhwie/>

Other Chapter Contact Information



Engineering in Medicine and Biology Society

By *Wayne Smith*

If you have any suggestions for meeting topics or speakers; or if you would like to become active in the Chapter please contact me at:

wjsmith@cisunix.unh.edu



Power Electronics Society

By *Kenric Nelson*

The Chapter is dormant at the present time. If you would like to explore reactivating the Chapter please contact me at:

kenric.nelson@ieee.org

Power Engineering Society



By *Paul Krell*

If you have any suggestions for meeting topics or speakers; or if you would like to become active in the Chapter please contact me at:

p.krell@ieee.org



Pre-University Activities

By *Don Sherwood*
donsherwood@ieee.org



Milford High School's
Applied Technology
Center

Students from Milford and surrounding areas have a unique opportunity to explore and test their interest in various engineering fields as

potential career choices. The Pre-Engineering courses offered at Milford High School's Applied Technology Center provide hands-on engineering projects as a means to expose the students to the requirements of working in a real engineering environment. The program works best when the projects are linked to mentors and company sponsored activities.

Students that just want to "test the water" can take the Introduction to Pre-Engineering course, where they work with representative examples of materials from all the pre-engineering programs. Students interested in gaining a deeper insight to an engineering field can select courses such as Electronics, Robotics / Computer Integration, Engineering Design, and Engineering Capstone. Several of these courses offer the student an option of obtaining college credits.

Jim Anderson and I had the opportunity to sit in on several final presentations given by senior students in Mr. Frank Xydias Pre-Engineering classes. The projects involved a variety of engineering disciplines and covered a wide range of topics from hover crafts to solar cells. Both Jim and I were very impressed with one student's ability to use several CAD/CAM programs to design and

manufacture a variety of automotive insignias. He presented the material in a confident and professional manor, and passed around actual parts to enhance the presentation.

All the students are to be congratulated for their hard work and excellent presentations. Most of the projects were successful while a few encountered some difficulties. But that is representative of real life engineering. The students whose projects were not totally successful did a good job investigating and presenting possible reasons for the outcome.

Frank is very interested in increasing the number of electrical engineering projects available to his students next year. To maximize the benefit, however, the program will require more involvement from the electrical engineering profession. Frank suggested several areas in which individuals and companies can make a big impact.

As individuals, engineers can volunteer to mentor the student during a project. This may involve an hour or so a week to guide the student through the various engineering phases. Another area is job shadowing. This involves allowing the student to follow you around for a portion of a day to see just what engineers actually do. A third area is to volunteer to give a talk on career days on a topic such "the life of an engineer".

Companies are needed to provide real life projects that students can become involved with. This can be as simple as a small project or activity that the student can perform at school, or as large as offering an internship where the student works 65 hours a semester on the company premises. The important factor is that the student experience how engineering is actually accomplished.

This is a great opportunity for members of the IEEE NH Section to influence students at the critical pre-university level to consider engineering as an interesting and rewarding career choice. If you or your companies are interested in becoming involved with this program please contact me or contact Frank Xydias directly at FXydias@SAU40.com.

Student Activities

Summer Vacation

By Nita Patel

nita.patel@ieee.org



Summer is a time for fun and lightheartedness. But that doesn't mean we have to stop learning during that time. Below are some tips, collected through various magazines, online articles and my thoughts, on how to keep learning and improving your skills during the summer.

In January, we make resolutions for self-improvement. By the time summer rolls around, many of these resolutions have been abandoned for some reason or another. Make some summer goals to carry us through the rest of the year. For your summer goals, focus on items that you have always wished to do instead of focusing on accomplishing what you think you should do.

- Read 2 new books each month. Pick a subject you have always been interested in and read a two books on that subject. For example, if you are fascinated by economic theory, pick up a couple of books by Milton Friedman, Adam Smith or John Keynes.

- Take dance lessons. Learn a new step whether it's the waltz, foxtrot, salsa, or hip-hop. Not only will you get to learn something fun but you will be getting your exercise.

- Teach yourself or take a class on 3 skills (1 per month) you have always wanted to learn, such as drawing, kayaking, photography or woodworking.

- Attend some Toastmasters meetings and improve your public communication skills.

- Record family stories or recipes. Each week, ask a family members for their favorite story or recipe. Compile these collections in a book. By the end of the summer, you'll have created a great gift for parents, grandparents, cousins, etc.

- Learn a foreign language. Planning a trip to Paris or Berlin. Use this opportunity to learn some of the basics of French or German. Learn 5 words each day and you will have amassed a vocabulary of over 400 words by the end of the summer. Enough to get you by in most conversations.

- Visit local museums or parks. Learn about the history of the location or just experience something different.

- Talk a stroll each evening or attend outdoor programs. Attending outside theater events and not only will you get your daily dose of Vitamin D but also will experience some of the arts. Enjoy the sunshine while it lasts!

Nashua Community College

By Barbara Bancroft

bbancroft@nhctc.edu



Summer is here and all is quiet on campus, but faculty and students are already thinking about next semester.

There are still a few National Science Foundation Scholarships available. Please see the linked brochure

http://ewh.ieee.org/r1/new_hampshire/Docs/2008-07-NSFAdd.jpg and application

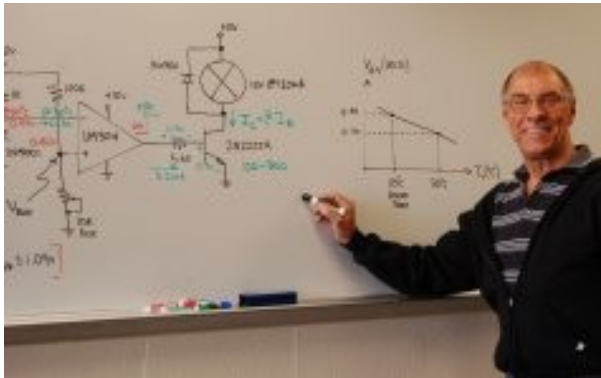
http://ewh.ieee.org/r1/new_hampshire/Docs/2008-07-NSFApp.doc for the scholarships.

We are getting ready for the Computers and Information Technology Seminars Series. The seminars are supported by the NCC IEEE Student Branch and Southern New Hampshire University. This year's theme is the 'Computing Profession in 2012'. If you can recommend a speaker for this series please contact me or Jim Isaak CS2010@JimIsaak.com.

We are working on some curriculum ideas. We always review our classes and modify them to keep up with the demands of industry and to make them more interesting. This year we will be using NXT Robots to make the Computer Engineering Technology and Electronic Engineering Technology classes more hands on and relevant. Watch next month's newsletter for more details.

One of the concerns that the college has in general is that we are still considered "VocTech" and that we only teach trades. While that is an important part of our mission, we have grown to be a strong all around Community College. There is a

big initiative both nationally and locally to make Community Colleges the first two years of four or more years of education. More and more of our students go on to four year colleges and for advanced professional degrees. The NCC faculty is working on forging relationships with the local four year schools to make this transition as smooth as possible.



Professor Ken Coletta explaining circuit theory



Professor Ken Coletta with students: Sean Morris, Thomas Kane, and Casey Diamantopoulos.

OTHER ARTICLES

2008 Young Engineer Award

By *Dean Bacon*
nhgump@gsinet.net



The IEEE NH Section Outstanding Young Engineer Award was established to recognize engineers 35 years of age or under for outstanding contributions in the leadership of technical society activities, leadership in community and humanitarian activities, and evidence of technical competence through significant engineering achievements.

The award, administered by the NH Section Awards Committee, is presented annually at the IEEE NH Section Annual Meeting. The recipient receives a plaque, and has the privilege of designating a college or university to receive a \$500.00 scholarship to be granted to an undergraduate who is a member of the school's IEEE Student Branch.

To be eligible for the award, an individual must be 35 years of age or under on January 1 of the presentation year (January 1, 2008 for this year's award), and have been a full member of the IEEE NH Section for at least one year. Nominations can be made by any NH Section member.

Factors to be considered for selection include: local IEEE activities and leadership, professional society activities, evidence of technical competence and achievement, community and humanitarian activities, educational achievements, and professional registration.

The recipient of this award will be recognized at

the IEEE NH Section Annual Banquet on November 6, 2008.

Nominations must be emailed to nhgump@gsinet.net no later than Wednesday, October 8, 2008.

Big Audacious Goal

By *Nita Patel*
nita.patel@ieee.org



The IEEE has developed a strategic plan defining its core values, long-term vision, and short term goals. From the IEEE website, here's a summary of the IEEE's strategic Plan.

KEY TERMS

Envisioned future conveys a concrete, but yet unrealized,

vision for the organization. **Core values** are the essential and enduring principles that guide IEEE. A **'Big Audacious Goal'** is a form of vision statement used in strategic planning that describes a clear and compelling catalyst that serves as a unifying focal point of effort. **Vivid descriptions** are descriptions of what it will be like to achieve the big audacious goal.

CORE VALUES

- (1) **Service to humanity:** leveraging technology and engineering to benefit human welfare; promoting public awareness and understanding of the engineering profession.
- (2) **Peer-reviewed:** using unbiased information to enhance the quality of life for all people.
- (3) **Global focus:** supporting and embracing the global nature of and need for technical work and engineering solutions.
- (4) **Intellectual activity:** forward-thinking; nur-

turing new and existing science and technology.
(5) Growth and nurturing of the profession: encouraging education as a fundamental activity of engineers, scientists and technologists at all levels and at all times; ensuring a pipeline of students to preserve the profession.

(6) Collaboration and community building: cultivating active, vibrant and honest exchange among cross-disciplinary and interdisciplinary global communities of technical professionals.

(7) Professionalism: creating a world in which engineers and scientists are respected for their exemplary ethical behavior and volunteerism.

(8) Trust and respect: promoting a culture where contributions at all levels are valued; encouraging member driven, volunteer-led, knowledge-based projects; building effective volunteer/staff partnerships.

BIG AUDACIOUS GOAL

Be essential to the global technical community and to technical professionals everywhere, and be universally recognized for the contributions of technology and of technical professionals in improving global conditions. Vivid descriptions of the goal:

(1) The IEEE community and its technologies will positively impact global prosperity and quality of life.

(2) Governments will increasingly seek IEEE's input as an unbiased source of technical information.

(3) Industry will recognize and value IEEE thereby strongly supporting professionals' participation in IEEE.

(4) Communities around the world will universally recognize and appreciate the profession and IEEE's role.

(5) Technological literacy will prevail among all educated citizens.

(6) IEEE members will have productive, distin-

guished and rewarding careers. Increasing numbers of students will choose careers in IEEE fields of interest.

(7) IEEE will be recognized as a global force in shaping education and curricula in IEEE fields of interest.

(8) IEEE will be a center of excellence in technology information and a global force in intellectual property rights management.

(9) IEEE members will universally find value in active engagement and involvement in the organization.

3-5 YEAR GOALS

(1) Industry professionals and their employers will value IEEE as a major resource to achieve success.

(2) IEEE will improve the professional competencies of students and professionals through education.

(3) IEEE will increasingly be valued by the global community as a catalyst for a balanced dialogue on technology-related issues.

(4) The public will increasingly value the role of IEEE and technical professionals in enhancing the quality of life and the environment.

(5) IEEE members will increasingly find value and enjoyment through their involvement in the organization.

(6) IEEE will operate as a model global association, with aligned purpose, energy, and infrastructure that facilitates the development and execution of coordinated strategy.

When NOT To Patent!

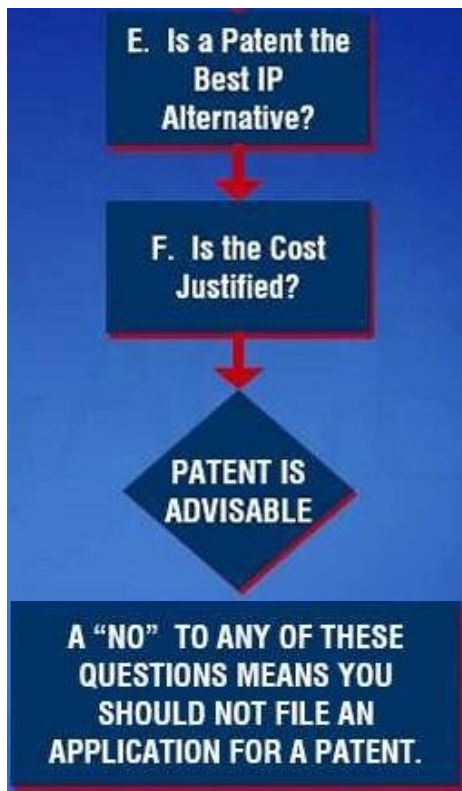
By Nita Patel

nita.patel@ieee.org



Patent attorney Marshall Honeyman with Lathrop and Gage, L.C. provided the flowchart below during a recent SPIE webcast to help you determine when and when NOT to file a patent.





What is a patent? According to Wikipedia, "A patent is not a right to practice or use the invention. Rather, a patent provides the right to exclude others from making, using, selling, offering for sale, or importing the patented invention for the term of the patent, which is usually 20 years from the filing date. A patent is, in effect, a limited property right that the government offers to inventors in exchange for their agreement to share the details of their inventions with the public. Like any other property right, it may be sold, licensed, mortgaged, assigned or transferred, given away, or simply abandoned." Essentially a patent gives you an enforceable right to stop others from duplicating your inven-

tion.

Question 1: Is it patentable subject matter?

There are two primary types of patents:
 (1) Utility patents which protect inventions that are a novel, non-obvious, and useful and
 (2) Design patents which are for ornamental designs of a functional item.

Utility patents include items such as a new machine, business methods, processes, computer functions (not the actual code), or any improvement on any of the above items.

Design patents include items such as a look for an athletic shoe or movie characters like Luke Skywalker, Yoda, E.T., etc.

You can not patent items such as natural phenomenon or mathematical formulas.

Question 2: Have you avoided barring activities? If you use, sell, or publicly disclose your invention more than 1 year before filing for a patent, then you have barred yourself from obtaining the patent. In most other countries, you do not even have the luxury of the 1 year. Absolute novelty, practiced in other countries, requires that there are no sales or public disclosure before filing.

Question 3: Do you own it? Many times there are questions about invention ownership specifically with individuals working for companies. Ownership should be established in some sort of written agreement. Usually, an inventor owns patent rights unless they were hired to invent. That is, if you signed a employment agreement regarding Intellectual Property (IP) rights or patent rights, then your company owns patent rights for any inventions developed during the

time you work for that company. You should also evaluate ownership and establish agreements when working with external, joint developers. If there are questions about who owns the IP, then you shouldn't file the patent.

Question 4: Does it survive the search? Before you spend the time and money to file a patent, you should have a professional searcher versed in that technology and in using art database searches look for similar patents. Searches are helpful because they will probably highlight the potential coverage available. The cost is relatively minimal and the search may produce prior art with which you were not already familiar.

Question 5: Is a patent the best IP alternative? Other kinds of IP include trade secrets, copyrights and trademarks. You might consider these options instead of or along with a patent. A trade secret is a formula, process, or method used by a company but not easily guessed by someone else. Protection is typically covered through non-disclosure agreements or employment agreements to not share trade secrets learned during the course of employment. A copyright gives the creator of the original exclusive rights to use it. Trademarks is typically a name or logo associated with a particular product or company.

Question 6: Is the cost justified? The cost to file a patent is typically between \$6,000 and \$20,000. As a result, you should consider how valuable the idea is to the company.

If you answer NO to any of the six questions outlined by Mr. Honeyman, you should not file a patent.

Membership Activities

By Stuart H. MacPherson

stuart.macpherson@ieee.org



Retirement & IEEE

If you are considering retirement, you need not retire from IEEE. You may be qualified as a Life Member. Life Members are IEEE members who are at least 65 years of age and who have been a member

of IEEE long enough that the sum of their years as a member and their age are 100 years or greater. The great benefit of a Life Membership is that your dues and regional assessments are waived every year! You are encouraged to stay as a member and to stay active. If you are about to be qualified as a Life Member, you will be contacted by the end of the year and you become a Life Member automatically on January 1st. Also, if you have been a Society member for at least five years, Society fees are waived too! Therefore, if you are considering retirement, determine when you will qualify. Keep your membership active and become a Life Member!

Become a Senior Member

NOTE: We have another member who is just starting the process to become a senior member.

Your NH Section continues taking an active role in supporting those who desire and qualify to become a Senior Member. Now is a good time, before summer is in full swing, to seriously consider upgrading. If you already have a resume, the process is simple, straightforward and not time consuming. I have not heard of any issues with the process. Over the past year, there has been a

steady stream of Senior elevations and everyone who has applied, has passed the review board. The process is based upon success. Please send me an email with your request!

Remember, the qualifications are straightforward: "... a candidate shall be an engineer, scientist, educator, technical executive or originator in IEEE-designated fields. The candidate shall have been in professional practice for at least ten years" " and shall have shown significant performance over a period of at least five of those years." .

Note: a PhD is equivalent to five years practice, or an MS to four years, or a BS to three years.

If you meet the above requirements, we can support you in seeking Senior Membership. The process is simple:

- Fill out the application.
- Three references from Senior or Fellow grade members are required.
- If you are nominated by a Section, Society or Affinity Group, only two references are required.
- It is understood that it may be difficult for you to find references. However, we can help you. Provide us with a recent CV or resume and your application. We can then write a nomination letter from the Section.
- We have gathered a list of Senior and Fellow members who are willing, based on your documents and possibly emails and phone calls, to provide you a reference.

The other members of the committee are: Tom Perkins, Past Section Chair; Jim Anderson, Section Chair; and Duncan Morrill. If you are considering Senior Member elevation, please contact us at nhiieee-membership@ieee.org

2008 IEEE Humanitarian Workshop



The IEEE Region 1 GOLD Coordinator, Uri Moszkowicz uim@ieee.org, is orga-

nizing a workshop, "Humanitarian projects through the lens of engineering" on Saturday, August 23, 2008. Tentative plans are to hold it at Boston University, One Sherborn Street.

Jointly held with IEEE GOLD, EWB-USA, & CITRIS

Many of us are fortunate to live in a relatively secure environment where we can pursue education and dreams. Far away from most of us in Africa, or even close to home like New Orleans in the United States or Sichuan in China, where catastrophes struck recently, there are tremendous needs for humanitarian aids. Engineers can play an active role in bringing hope, relieving pain, restoring livelihood, and accelerating economic progress in these areas through appropriate use of technology.

IEEE's young professional entity (GOLD) is organizing its first humanitarian workshop in Boston together with Engineers Without Borders (EWB-USA) and the Center for Information Technology Research in the Interest of Society (CITRIS). The purpose of the workshop is to share with students and professionals about successful and ongoing projects that had used technology to practically enhance humanity. We warmly welcome all who have desires to use their engineering skills to serve the community to join us in this 1-day workshop.

About the Organizers

A non-profit organization, IEEE (<http://www.ieee.org>), is the world's leading professional association for the advancement of

technology, is a non-profit organization. Its Graduates Of the Last Decade (GOLD) is a program developed to help student members transition to young professionals. GOLD offers programs and services to graduating students, recent graduates and young engineers. The IEEE Committee on Earth Observation (ICEO) (<http://www.ieee-earth.org/>) is also participating.

EWB-USA (<http://www.ewb-usa.org>) is a non-profit humanitarian organization established to partner with developing communities worldwide in order to improve their quality of life. This partnership involves the implementation of sustainable engineering projects, while involving and training internationally responsible engineers and engineering students.

CITRIS (<http://www.citris-uc.org>) creates information technology solutions for many of our most pressing social, environmental and health care problems.

Schedule:

9:00am - 9:30am Registration
9:30am - 9:45am Welcome
9:45am - 10:15am Opening speech
10:15am - 10:45am ICEO
10:45am - 12:00pm EWB
12:00pm - 12:30pm CITRIS
12:30pm - 1:45pm Lunch
1:45pm - 2:00pm Hands-on session introduction
2:00pm - 3:45pm Hands-on session
3:45pm - 4:15pm Hands-on session judging
4:15pm - 4:45pm EWB actual solutions. Prize for best group.
4:45pm - 5:00pm Misc

Please support them by posting the meeting notice below at work or school.
http://ewh.ieee.org/r1/new_hampshire/Docs/2008-06-Hum.pdf

Other Meetings of Interest

Please let me know if you are aware of other meetings that might be of interest to our members. We each belong to different societies, read different publications, work in different industries, and surf different web sites. So if you see any interesting meetings or conferences please send me the notice or the URL.

To keep the list manageable I have limited it to meetings in North America during the next six months.

Jim Anderson james-w-anderson@ieee.org

June 29 - July 2, 2008

2nd International Symposium on Bio- and Medical Informatics and Cybernetics: BMIC '08
Rosen Center Hotel, Orlando, Florida
<http://sciiis.org/BMIC2008>

June 29 - July 2, 2008

6th International Conf. on Politics and Information Systems, Technologies and Applications
Rosen Center Hotel, Orlando, Florida
<http://www.socioinfocyper.org/pista2008>

June 29 - July 2, 2008

2nd International Conference on Knowledge Generation, Communication and Management: KGCM 2008
Rosen Center Hotel, Orlando, Florida
<http://www.sciiis.org/KGCM2008>

July 13 - 16, 2008

IEEE International Professional Communication Conf.
Concordia University, Montreal, Canada
<http://ewh.ieee.org/soc/pcs/?q=node/2>

July 20 - 24, 2008

PES General Meeting
David L. Lawrence Convention Center and Westin Convention Center Hotel Pittsburgh, PA
<http://ewh.ieee.org/cmte/PESGM08/>

August 7 - 8, 2008

IEEE Wireless Hive Network Conf. (IEEE WHNC 2008)
Courtyard by Marriott in Austin, Texas
<http://www.ieee-whnc.org/index.html>

September 4 - 5, 2008

Battery Power 2008
New Orleans, LA
http://www.batterypoweronline.com/bp08_reg.php

September 28 - 30, 2008

North American Power Symposium (NAPS)
University of Calgary, Calgary, Alberta, Canada
<http://www.naps2008.net/>

October 14 - 16, 2008

IEEE USA Innovation Forum
TBD Hotel, Denver, CO
s.grayson@ieee.org

October 14 - 15, 2008

57th NEQC Conf. WORLD CLASS TRANSFORMATION:
EXCELLENCE, ECONOMICS, EDUCATION
Seminars October 13, 16 and 17.
Best Western Royal Plaza, Marlborough MA.
<http://www.neqc.org/conference/57/>

October 3 - 5, 2008

Second Annual PDS - WIE Conference

“Engineering Your Future”

Atlantic City, NJ

[http://www.ewh.ieee.org/reg/2/temp/WIE%20Engineering%20your%20future%20flyer%20\(rev%20CCC\).htm](http://www.ewh.ieee.org/reg/2/temp/WIE%20Engineering%20your%20future%20flyer%20(rev%20CCC).htm)

October 26 - 29, 2008

IEEE Conf. on Electrical Insulation and Dielectric Phenomena.

Delta Hotel, Québec City, QC, Canada

<http://ewh.ieee.org/soc/dei/ceidp/ceidp2008.htm>

November 3 - 5, 2008

Electrical Manufacturing Expo

Gaylord Palms Convention Center, Orlando, FL

<http://www.eic-emexpo.org/2008eme/index.html>

November 5 - 6, 2008

Energy Efficiency and Sustainability Symposium

Atlanta Marriott Marquis Hotel

http://www.greentechnewsmag.com/energy08_index.php

November 10 - 12, 2008

IEEE International Conf. on Technologies for

Practical Robot Applications - TePRA 2008

Holiday Inn Select Hotel, Woburn, MA

<http://www.ieeeroobot-tepra.org/>

November 17 - 18, 2008

The IEEE Energy 2030 Conf.

Marriott Marquis, in Atlanta, Georgia

<http://ewh.ieee.org/conf/energy2030/>

November 30 - December 4, 2008

IEEE Global Communications Conf., GLOBECOM 2008

Hilton New Orleans Riverside, LA

<http://www.comsoc.org/confs/globecom/2008/>

December 5 - 13, 2008

Fourth International Joint e-Confs. on Computer, Information, and Systems Sciences, and Engineering

<http://www.cisse2008online.org/>

December 8 - 9, 2008

LITHIUM MOBILE POWER 2008

Las Vegas Hilton - Las Vegas, NV

<http://www.knowledgepress.com/events/2131516.htm>

WANTED

Wanted - Additional Photographers

Ravi Subrahmanyan has volunteered to be our photographer but his schedule will not allow him to cover all our events. Therefore, we need one or more additional volunteers to take photographs at our Section events and meetings. If you are interested to help out, please email the Editor, Jim Anderson, at james-w-anderson@ieee.org

Wanted - Articles on “How I became interested in engineering.”

Was it because you were always interested in taking things apart and putting them back together (with “extra pieces”)? Was it by chance? Was it because you come from generations of engineers and this was your destiny? What was it? Please send me, Jim Anderson, (james-w-anderson@ieee.org) your story on how you became interested in Engineering and chose this profession. Every month, we will try to feature an article in the newsletter.

Questions and Answers

Q: How can I be removed from the mailing list or update my email address for section news?

A: Send email to the NH Section Administrative Assistant, Donna Davis, at NHIEEE@aol.com

Q: How do I start a new society chapter?

A: Please refer to this site for details on eligibility and requirements: <http://www.ieee.org/portal/pages/tab/cha/newchap.html>

Q: Why doesn't the URL http://www.ieee.org/nh_section work?

A: The URL is case sensitive and you must use http://www.ieee.org/NH_Section.



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