ISSUE 6 | VOLUME 86 | FEB 2014

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WNY engineer

HELPING MAKE ESB *YOUR* SOCIETY

TECHNICAL ARTICLE

Thin, Active Invisibility Cloak Demonstrated by Marit Mitchell

Invisibility cloaking is no longer the stuff of science fiction: two researchers in The Edward S. Rogers Sr. Department of Electrical & Computer Engineering have demonstrated an effective invisibility cloak that is thin, scalable and adaptive to different types and sizes of objects. Professor George Eleftheriades and PhD student Michael Selvanayagam have designed and tested a new approach to cloaking - by surrounding an object with small antennas that collectively radiate an electromagnetic field. The radiated field cancels out any waves scattering off the cloaked object. Their paper 'Experimental demonstration of active electromagnetic cloaking' appeared recently in the journal Physical Review X. "We've taken an electrical engineering approach, but that's what we are excited about," says Eleftheriades. "It's very practical."

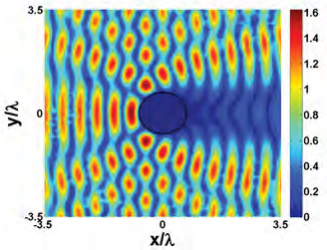
Picture a mailbox sitting on the street. When light hits the mailbox and bounces back into your eyes, you see the mailbox. When radio waves hit the mailbox and bounce back to your radar detector, you detect the mailbox. Eleftheriades and Selvanyagam's system wraps the mailbox in a layer of tiny antennas that radiate a field away from the box, cancelling out any waves that would bounce back. In this way, the mailbox becomes undetectable to radar. "We've demonstrated a different way of doing it," says Eleftheriades. "It's very simple: instead of surrounding what you're trying to cloak with a thick metamaterial shell, we surround it with one layer of tiny antennas, and this layer radiates back a field that cancels the reflections from the object."

Their experimental demonstration effectively cloaked a metal cylinder from radio waves using one layer of loop antennas. The system can be scaled up to cloak larger objects using more loops, and Eleftheriades says the loops could become printed and flat, like a blanket or skin. Currently the antenna loops must be manually attuned to the electromagnetic frequency they need to cancel. But in the future, they could function both as sensors and active antennas adjusting to different waves in real time, much like the technology behind noise-cancelling headphones.

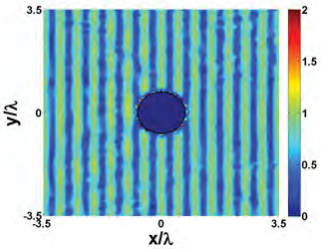
Work on developing a functional invisibility cloak began around 2006 but early systems were large and clunky. If you wanted to cloak a car, for example, in practice you would have to completely envelop the vehicle in many layers of metamaterials in order to effectively "shield" it from electromagnetic radiation. The sheer size and inflexibility of the approach made it impractical for real-world uses. Earlier attempts to make thin cloaks were not adaptive and active and could work only for specific small objects.

Beyond obvious applications, such as hiding military vehicles or conducting surveillance operations, this cloaking technology could eliminate obstacles. For example, structures interrupting signals from cellular base stations could be cloaked to allow signals to pass by freely. The system can also alter the signature of a cloaked object making it appear bigger, smaller, or even shifting it in space. And though their tests showed the cloaking system works with radio waves, re-tuning it to work with Terahertz (T-rays) or light waves could use the same principle as the necessary antenna technology matures. "There are more applications for radio than for light," says Eleftheriades. "It's just a matter of technology. You can use the same principle for light, and the corresponding antenna technology is a very hot area of research."

Without Active Cloaking



With Active Cloaking



Marit Mitchell is a senior communications officer at the The Edward S. Rogers Sr. Department of Electrical & Computer Engineering at the University of Toronto. He can be reached at marit.mitchell@utoronto.ca or 416-978-7997.

Article and photos credit: University of Toronto

PRESIDENT'S MESSAGE

"The suspense is terrible… I hope it'll last."
- Willy Wonka
(Gene Wilder)

It's a New Year with new ventures for the society! First of all, ESB has moved its office to AN-COR Industrial Plastics Inc at 900 Niagara Falls Blvd, North Tonawanda, NY 14120. The company is providing the society with free office and storage space. We have also obtained a PO Box.

Please join me in welcoming two new members to the society: Brian Klementowski and Mike Samol.. Samol has jumped into the society with both feet as he is now the secretary and has volunteered his services to many other activities. Thank you Mike!

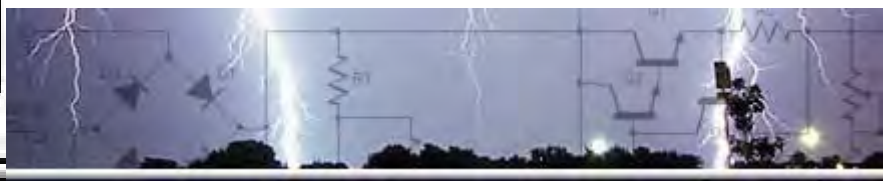
Our board member Jon Kolber has moved to Colorado to help FEMA inspect damaged bridges. He will be writing a few articles on his investigations out there – stay tuned for future newsletters!

Please check out our new and improved ESB website! Marco Scofidio has refreshed the entire site and we now have the capability to add online advertisers. We will also have unlimited web pages in the near future and will add a golf tournament and a scholarship run page. Visit the site at www.tesb.org and if you would like to put your company on our website for $20 per year, contact Marco Scofidio at mscofidio@gmail.com.

Our scholarship run will be renamed in John Beishline's honor for next year. The board has some great ideas for the run and the planning process is going to start much earlier this year. We have a bit of a learning curve with the loss of John. Look for a kick off meeting in late January or early February. If you would like to attend please contact me.

As always, the Ways & Means meetings are open to the public and are a great way to find out what's going on at the society. Most of the committees report on their activities and it's a great way for someone to get involved. Volunteer activities include the ESB golf tournament, the ESB scholarship race, or the Buffalo Marathon water stop, among others.

Matthew J. Plizga, P.E.
ESB President
mplizga811@aol.com



CALENDAR OF EVENTS

02-03-14	6pm	Ways and Means Meeting	2660 William St, Buf (Construction Exchange)
02-03-14	7pm	Directors Meeting	2660 William St, Buf (Construction Exchange)
02-13-14		UB Non-Profit & Public Service Fair	
02-17-14 to 02-22-14		Engineers Week Volunteer	Buffalo Museum of Science
03-03-14	6pm	Ways and Means Meeting	2555 Walden Ave, Buffalo (Wendt Corp)
03-03-14	7pm	Directors Meeting	2555 Walden Ave, Buffalo (Wendt Corp)
04-08-14		ISA Tech Expo	Marriott in Amherst
06-01-14		ESB Scholarship Applications Due	

ESB NEXT BIG EVENT

Engineers Week

Soon it will be Engineers Week.
How will you impact the world?

DISCOVER
LET'S MAKE A DIFFERENCE

Would you be interested in running an engineering demo in your discipline at the Buffalo Museum of Science?

BUFFALO MUSEUM of SCIENCE

When?
Any day from Feb 17 thru 22
Time?
Any time from 1030am to 330pm

Volunteers receive FREE museum admission for you plus two additional guests on the day of volunteering! Free parking too. Contact Robin Closs at robin@rjrpc.com by Feb 5 to reserve your spot.

Go and impact your world!

Flying Better

Kids will invent a flying paper model, build their prototype, test, refine, optimize, redesign, rebuild, and test some more!

Catalyst for Fire

Adults can find out if they have what it takes to start this sugar on fire!

And other activities!
(Subject to change)

ESB CORPORATE MEMBERS

An-Cor Industrial Plastics Inc
Angevine Acoustical Consultants Inc
AP Technical Search
Barron and Associates PC
D R Chamberlain Corp
Earth Dimensions Inc
Eberl Iron Works Inc
Engineers from the Corps
EnSol Inc
Frey Electric
Golder Associates Inc
GZA GeoEnvironmental
Hatch Mott MacDonald
IMA Life
Kistner Concrete Products
M.I.S. of America Inc
NGC Testing Services
Parsons Brinckerhoff Inc
Prince Rubber & Plastics Co Inc
RJR Engineering PC
Se-Mar Electric Company Inc
SJB Services Inc
TMP Technologies Inc
Trautman Associates
T. Y. Lin International
University at Buffalo-School of Engineering
Weydman Electric Inc

TECHNICAL ARTICLE

Engineering Feats: The Grand Canyon Skywalk By Tara Pfarner

The Grand Canyon Skywalk, which opened in 2007, is a horseshoe-shaped glass walkway platform. It is located on the edge of the Grand Canyon West at Eagle Point, at an astonishing 4,000 feet above the canyon's bottom. Adrenaline seekers can experience a once in a lifetime thrill here.

The skywalk is obviously not your average walkway. Extending into thin air some seventy feet beyond the ancient rock face, this engineering wonder allows visitors an unmatched view of the scenery, complete with the occasional eagle soaring below their feet.

The floors and sidewalls of the Skywalk are made of glass - 29 tons of glass to be exact. The floor is comprised of five layers of glass held together with a special glue that strengthens exposed edges and improves visibility. Visitors are limited to 120 at a time and they must wear special cloth slippers to avoid scratching the glass. The layering system allows for only the top layer to be replaced should a scratch or other damage occur. The structure consists of 500 tons of steel which was designed to withstand a magnitude 8 earthquake 50 miles away.

The inner and outer beams of the walkway are separated by about 3 meters and move independently of each other. Daytime heat and visitor weight could cause slight movement of the beams, resulting in an incline or decline of the glass panels. To remedy this, pads were installed between the glass and steel beams to compensate for vertical deviation and provide a flat surface for the glass panels. Prior to opening day, a detailed x-ray examination was performed on the welding and steel structure.

Engineers had to take into account a number of environmental factors, including the unique wind patterns the Grand Canyon experiences, the hardness of the rock, and potential erosion in the area.

This structure is amazing both for the magnificent views it provides, and because of the ingenuity required for its design and construction.

FEBRUARY BIRTHDAYS

Dale R Juda
Gino Forte PhD PE
Joseph P Jaracz PE
Ronald Connor
Carmelo Fiorello Jr
Edward O Berlin
Steve SanFilippo
Anthony R Kane Jr
Derrek R Drass
Hanjin Hu
Allen Vaillancourt
Brian Yaeger

Please send your birth month to ESB1894@gmail.com for inclusion!

AMUSEMENT

President Facts For President's Day

James Buchanan was the only President who was a bachelor. Where do you think he could meet at eligible bachelorette?

Do you know what Woodrow Wilson's first name was? It wasn't Woodrow as that was his middle name. His first name was Thomas.

Harry S Truman's full name was Harry S Truman. He didn't have a middle name, only a middle initial.

Shhh...Harry Truman memorized the eye chart so he could get into the army. Otherwise, he would of failed the eye test due to his bad eyesight.

Lyndon B Johnson's speechwriter went on to write Jaws after writing speeches. Daaaa dun...ahhhhhh!

President Ben Franklin's formal education didn't go past ten years of age. He probably wasn't an engineer then, eh?

If you take the results for 1980 and combine them with 1984's results, Ronald Reagan won 1014 to 62. Great score!

Who could write Greek with one hand while the other hand was writing in Latin? President James Garfield of course!

Who was on the $500 bill?
Who was on the $1000 bill?
Who was on the $5000 bill?

William McKinley
Grover Cleveland
James Madison

Local/Online PDH Opportunities

For additional information regarding these opportunities, contact our office at ESB1894@gmail.com or 716-873-4455. Discounts for some pricing are available for certain society members, small companies, etc. And if you have information regarding future PDH opportunities that may be of interest to our members, please forward them to our office for inclusion in the newsletter and on our website at www.tesb.org.

Date	Hours	Location	Information	Cost
All	Varies	Online	Multiple at http://aspe.org/webinararchives	$130
All	Varies	Online	Multiple at http://continuingeducation.zweigwhite.com	Free
All	Varies	Online	Multiple at http://www.csemag.com/media-library/on-demand-webcasts.html	Free
All	Varies	Online	Multiple at http://campusonline.iccsafe.org/crscatalog.php	Free
All	2	Online	ASME Standards and Certification	Free
02/03/14	1.5	Webinar	Investigation and Repair of Fire-Damaged Framing	$349
02/04/14	1	Webinar	Two Engineering Ethics Case Studies - Model Results & Contractor Pressure	$299
02/04/14	1.5	Webinar	LRFD for Geotechnical Engineering Features: Micropile Foundations	$349
02/05/14	1.5	Webinar	Joints in Buildings	$349
02/06/14	1.5	Webinar	Integrating Stormwater Harvesting Into Low Impact Development	$349
02/07/14	1.5	Webinar	Improving Pedestrian Crossing Safety at Uncontrolled Locations	$349
02/10/14	1.5	Webinar	A General Overview of ASCE 7-10 Changes to Wind Load Provisions	$349
02/11/14	1.5	Webinar	Energy Piles: Background and Geotechnical Engineering Concepts	$349
02/12/14	1.5	Webinar	Curve Number & Vegitative Techniques to Manage Stormwater Runoff Sustainably	$349
02/13/14	1.5	Webinar	The Five Habits of Highly Effective Marketers	$349
02/14/14	1	Webinar	Connection Solutions for Wood-Framed Structures	$299
02/14/14	1.5	Webinar	Groundwater Treatment Technologies	$349
02/18/14	1.5	Webinar	Moment-Resisting Connections in Steel Structures	$349
02/19/14	1	Webinar	Quality Management in the Design Organization	$299
02/20/14	1.5	Webinar	Deterioration and Repair of Concrete	$349
02/21/14	1.5	Webinar	Prepare/Implement Construction Site Store Water Pollution Prevention Plans	$349
02/21/14	7	Depew	Erie-Niagara Chapter NYSSPE 2014 E-Week Seminar Series, Hearthstone Manor, Depew	$249
02/21/14	1	Cheektowaga	The Rise of One World Trade Center (Part of Erie Niagara NYSSPE Awards Banquet)	$45
02/24/14	1.5	Webinar	Strengething Structural Steel Beams	$349
02/27/14	1.5	Webinar	Cold-Weather Stormwater BMPs that Work	$349
02/27/14	1.5	Webinar	Improving Safety at Railroad Highway Grade Crossings	$349
02/28/14	1.5	Webinar	Alternative Designs for Anchorage to Concrete	$349
03/04/14	1.5	Webinar	Verification of Computer Calculations by Approximation Methods	$349

News Blurbs Now! (NBN)

As part of a $32 million renovation, a Liebherr fixed cargo crane has been installed at a new dockside facility by the Maid of the Mist boat tour company in Niagara Falls. The crane's lifting capacity is 200 tons when at a radius of 50 feet but it can be extended to reach up to 78 feet. This crane will be used to assist in the maintenance of the 600 passenger boats and also to remove the boats from the water during the winter months. You don't want to see the bottom of Niagara Falls in February? Me neither!

The University at Buffalo's Engineering Department reported in December that their new Institute for Bridge Engineering is working to develop plans for bridges that are resistant to hazards (both natural and man-made) as well as looking at ways to build safe, more cost-effective bridges. They are training the next generation of bridge engineers to do the same. A critical part of the infrastructure of every major city, the average age of a bridge in the United States is 42 years with 1 in 9 being "structurally deficient", UB's press release reports. George C Lee PhD, an internationally renowned earthquake engineer, will serve as the Institute's director. He has served as director of MCEER, UB's earthquake engineering and extreme events research center, and he received the 2006 Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring. UB students will benefit from working with some of the nation's top civil engineers and experts in the field.

Representatives from RJR Engineering again hosted a booth at PowerGen International in Orlando, Florida late last year. In between attending seminars and meeting with colleagues from the power generation industry, RJR staff enjoyed the warm weather, which was a significant improvement over what Buffalo was experiencing at the time. Brrrr!

In December, Hatch Mott MacDonald and its Canadian parent company Hatch received one of two Premier Project Awards at the Platts Global Energy Awards for their work on the Niagara Tunnel project. The Tunnel will provide a "reliable, maintenance-free source of clean energy for the next 100 years" and is a key element in Ontario Power's long-term energy plan. The Tunnelling Association of Canada also named the project Canadian Tunnelling Project of the Year.

Frey Electric was a key component in the completion of the new Greenpac Mill Paper Facility in Niagara Falls, NY. The facility is home to a 600 foot long paper milling machine which produces cardboard innerboard used by companies nationwide. Using recycled cardboard, the facility makes up to 1400 tons of rolled cardboard a day. Frey Electric installations included underground high voltage feeders, interior and site lighting, controls and power for the machines, connections for supplemental operations, and startup, commissioning, and service support of the equipment.

Picone Construction Corp is proud to announce the hiring of their new Assistant Project Manager, Kevin Martin. He is an Erie Community College graduate with an AS degree in Construction Management Engineering Technology. With over five years of construction industry experience in field and project management, he will be sure to add to the extensive experience and knowledge that Picone current holds.

Jon Kolber is moving to Colorado to deploy as a rehired Corps of Engineers annuitant to do infrastructure inspections in the Denver area on a FEMA mission relating to last summer's floods. His assignment is a minimum of sixty days, but he will most likely be there for February, March, and April. This is a wonderful and unexpected opportunity which Jon is looking forward to.

RJR's President Joe Lowry has been busy assisting students at local high schools with their Science Olympiad projects. Good luck to all participants! Where have you volunteered lately?!?

We need your news blurbs NOW! We want to know about your recent projects, awards, hires, promotions, patents, new products, partnerships, open houses, tours, and anything else you'd like to share. Send your noteworthy news to ESB1894@gmail.com.

Ramblings

By Robin M Closs SE PE

What is most important to you? Do you put that first in your life or does it end up last because you "know" it will always be there? List the five things that you wouldn't want to live without. (I know my son is on this list.) List the five things you believe you need to carry on in this world. (Of course, money makes my list.) Prioritize those ten and adjust your life accordingly.

Carl Rogers, an American psychologist, once stated that "The only person who is educated is the one who has learned how to learn and change." Have you learned how to learn? For almost every work project that I begin, there is something new that I need to ask colleagues about or search the web for. With over thirteen years experience as a structural engineer, I still have to learn almost every day. Are you able to change to adapt? The world changes every day. Keep up...otherwise Rogers doesn't believe you are educated. Are you educated? Are you continually being educated?

I sit in church and I learn. I teach children and I learn. I play hockey and I learn. I volunteer to be an officer in a society and I learn. Sometimes, the learning is very obvious. Other times, it takes months or years to realize that I learned something. What did you learn today? What could you share with your grandson that would impact his life forever? What could you share with me that would make me a better editor of this newsletter?

Don't be so busy making a living that you forget to make a life. I'm watching you...not really...but someone is.

Robin M Closs SE PE is the current treasurer and past president of The Engineering Society of Buffalo. She has worked from home for over ten years as a structural engineer for RJR Engineering PC in Springville NY. She can be reached at robin@rjrpc.com and would enjoy getting to know you over lunch!

One of Our Newest Members

By Matthew J Plizga PE

Now serving as secretary, it's Mike Samol!

My first impression of Mike was how passionate he was about volunteering and filling a need. He was just in time as we were looking to fill the secretary position. Mike also reminds me of myself as he too started out in a field other than engineering. Mike was a former roofer who worked on the industrial side of things.

Mike worked on memorable projects including a Praxair job where he was the project manager. He worked with engineers to develop a solution to working around a carbon dioxide roof vent to limit the workers' exposure to the gas. Mike also worked on some buildings at The West Valley Demonstration Project where they turned highly contaminated radioactive waste into glass rods, a process known as vitrification. Mike, being the project manager, was in charge of the team - coordinating radiation classes, following rigorous practice standards, managing worker safety, and all technical aspects of the job. Mike was also president of Roofers Local 74.

After many years of industrial roofing, Mike decided to go back to school for Engineering. "I went to ECC and enjoyed the chemical classes there. I transferred to UB and decided to go into Chemical Engineering. I liked molecular bonding, organic, and bio chem classes." Mike also likes to use UniSim for chemical engineering and the Microsoft suite for software needs.

Mike comes from a big family - six sisters and two brothers. Mike has visited Atlanta and really enjoys it down in Georgia. He calls it "Hotlanta". Mike enjoys the outdoors in his free time too. "I enjoy taking my canoe on small lakes in New York and fishing at sunrise." Mike is also not married so watch out single ladies!

Mike is also a passionate community volunteer in his home town of Elma - as a volunteer fire fighter, EMT, and fire commissioner.

The Engineering Society of Buffalo is lucky to have such a dedicated and energetic person on the board. Mike comes to each board meeting with vigor and passion. He is going to be a great asset to our group and I think we can expect Mike to be a big part of ESB for many years to come.

Application

Date: _____

The undersigned Company herewith makes application to The Engineering Society of Buffalo for a CORPORATE MEMBERSHIP.

Company: _____

Company Address: _____

_____

City: _____

State: _____ Zip: _____

Name of Company Liaison for Mail:

_____

Phone: _____

Fax : _____

City: _____

Email: _____

Nature of Business: _____

_____

Areas of Specific Interest: _____

_____

_____
Signature of Company Officer or Representative

Associate Member Appointments

Contact #1

Name: _____

Phone: _____

Email: _____

Contact #2

Name: _____

Phone: _____

Email: _____

Contact #3

Name: _____

Phone: _____

Email: _____

Contact #4

Name: _____

Phone: _____

Email: _____

Contact #5

Name: _____

Phone: _____

Email: _____

Biography

Your Corporate Membership entitles your organization to submit a 150 word biography of your company for future publication in the ESB newsletter, "The Western New York Engineer".

Company Profile Enclosed Y N

Elected by the Board of Directors

_____ *Month* _____ *Day* _____ *Year*

Amount Received:

Dues $_____

Please allow 4-6 weeks for processing.

Dues
$180 Corporate
$80 Individual
$35 Non-Resident
$30 Retired
$20 Student

Western New York Engineer
Advertising Contract
September 2013 - August 2014

The Western New York Engineer is a monthly publication of ESB

Please insert our advertisement in the ESB Newsletter per terms and stipulations of the following rates:

Select One	Ad Start Month	Number of Issues To Include Ad	❑ Business Card Maximum size 3-3/4" wide x 2" tall	❑ 1/4 Page Maximum size 3-3/4" wide x 4" tall 7-1/2" wide x 2" tall	❑ 1/2 Page Maximum size 7-1/2" wide x 4" tall	❑ Full Page Maximum size 8" wide x 10" tall
❑	September	11	$195	$345	$550	$980
❑	October	10	$190	$340	$540	$960
❑	November	9	$185	$335	$530	$940
❑	December	8	$180	$325	$520	$920
❑	January	7	$175	$315	$500	$880
❑	February	6	$165	$300	$480	$840
❑	March	5	$150	$275	$450	$785
❑	April	4	$130	$240	$400	$695
❑	May	3	$105	$195	$330	$570
❑	June	2	$75	$140	$240	$410
❑	July/August	1	$40	$75	$130	$215
❑	One Time	1	$40	$75	$130	$215
❑	Color Back Half Page 11 months					$1,300

ESB **Corporate** Members receive a 20% discount from the above pricing. You may update your membership to corporate at any time by paying the difference in dues for the year.

☐ Copy Enclosed (business card or similar) ☐ Electronic file (.jpg, .gif, or similar)

☐ Do not wish to advertise ☐ Payment Enclosed ☐ Please Bill Me

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Phone _____
Signature _____

Return Contract to:
The Engineering Society of Buffalo, Inc.
PO Box 1677
Amherst, NY 14226
Phone: 716-873-4455
Email: ESB1894@gmail.com
Make your check payable to "ESB"

National Engineers Week

by Tara Pfarner

The third full week in February (2/16/14 to 2/22/14) marks National Engineers Week in the United States. It was first observed in 1951 by the National Society of Professional Engineers (NSPE) in conjunction with President George Washington's birthday. Washington, often considered the nation's first engineer, was a noted surveyor and mapmaker in his time.

National Engineers Week serves to call attention to the contributions that engineers make to society, and is a time for engineers to emphasize the importance of learning math, science, and technical skills. It is observed by more than 70 engineering, education, and cultural societies, and more than 50 corporations and government agencies.

It is also during Engineers Week that the winner of the Federal Engineer of the Year Award is announced. This prestigious award, sponsored by the Professional Engineers in Government, honors engineers employed by a federal government agency with a minimum of 50 engineers worldwide, who are nominated by their employer. Engineering achievements, education, continuing education, professional/technical society activities, NSPE membership, awards and honors, and civic and humanitarian activities are all considered by the panel of judges established by NSPE Professional Engineers in Government (PEG).

Many activities take place during National Engineers Week, such as the Future City Competition National Finals, where middle school students team up with an educator and an engineer to imagine, design, and build cities of the future. The winning regional teams receive a free trip to Washington, DC to participate in this event. A short time ago, past ESB president Robin Closs accompanied the team she mentored.

February 20 is Introduce a Girl to Engineering Day, also called Girl Day. This movement shows girls how creative and collaborative engineering is, and how engineers change our world. Girls can benefit from a positive role model in the math, science, or technical fields by shadowing or participating in local activities.

Locally, the Buffalo Museum of Science is sponsoring engineering activities all week, such as engineering a water filtration device from everyday materials, learning about spider webs with the Engineering of Arachnids, and exploring the intersection of art and engineering by examining Frank Lloyd Wright's work. Volunteers are needed at the museum too; see more information on page 3 of this newsletter.

Be sure to do your part to promote National Engineers Week and introduce engineering to the next generation! You can find more information about Engineers Week at discovere.org too.

Newsletter Information

Do you want to see your name here?
Are you itching for your fifteen minutes of fame?
Do you dream of being a published author?
Submit your article and we can make that dream come true!

All submissions to be included in the newsletter
are due by the 15th of each month.

Corporate members, submit a recent corporate bio
to ESB1894@gmail.com for
future inclusion in the newsletter.

Do you know someone who might like to read our newsletter?
Does someone try to steal your copy?
Don't let them be a thief -
send their home or business address to ESB1894@gmail.com!

DID YOU KNOW?
All members are allowed simple job listings on our
website including job title, company name, and web link.
Corporate members are allowed an employment ad twice per year in
this newsletter...for free. (Maximum of a quarter page size please.)

The Freedom of "No"

By Mary Jo Asmus

Most leaders I know are overwhelmed with the sheer volume of work that's on their plate. Some of it's important, but much of it wastes precious time that detracts from the important things they need to do to become or remain successful. Yet without making the effort to think about their list of things they think they need to get done, they continue to worry about how they'll get it all done. By attempting to do it all, they sink into ineffectiveness as they lose energy, sleep, and focus.

Has anyone told you that your ability to get organized and focus efforts on what's most important is a test of your ability to lead? Indeed it is, even if it's not been made explicit. You must learn to say "no" to some things. Feeling the freedom of "no" allows you to focus on what's most important for you and your organization to be successful. Saying "no" when appropriate frees you up to make that big impact, to inspire others, to have a vision or to develop the relationships that are essential to great leadership. Courageous leaders say "no" in order to be most effective. You must:

Set aside time to get organized. For most leaders, reflection time is at a premium; but constant activity and reactivity will only diminish your ability to be successful. Set aside sacred thinking time to remind yourself about what's most important for you to lead your organization well. Make it absolutely, positively certain that taking action in the areas you need to focus on are a priority. Much of the other stuff can be placed at the bottom of the list or delegated. The rest you must say "no" to.

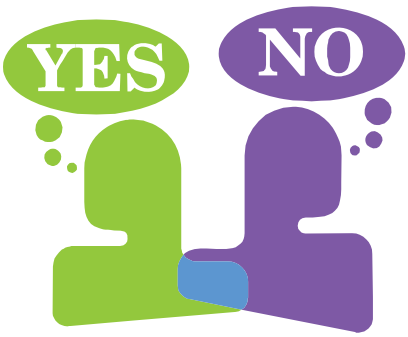
Determine what to say "no" to. Make and keep a list of things you have pending. This might sound elementary, but I've noticed many leaders don't have a way to stay awake and aware of what they need to get done. Use whatever system you have at your disposal and log in everything that you've been asked to do (or think you need to do) - short term and long term. Check the list regularly against your organizational mission, your values, the urgency of the request, and whether there might be a delegation/learning opportunity for someone on your team. After that, I'm pretty sure you'll regularly find some things you just don't need to do.

Develop a strategy for communicating your "no." You will get push-back when you've decided to say "no" to something. There will always be people who think their urgent item requires your attention. How will you tell your manager, your peer, accounting or human resources? Find a respectful and logical way to let them know how you made the decision to forgo the task in favor of doing other things that are essential. Listen respectfully to their objections. (PS Do not say "I don't have time" - it's a cop-out. Be honest with them about your priorities.)

Continually reassess your "no's." Have a regular meeting with yourself. Lock it in on your calendar, and if it requires getting away where you can't be found for an hour or more to think, you'll notice that the world won't fall apart without you. There will always be new things to reassess. Regular thinking time is a requirement to be deliberate in working through your list to get to the "no's."

Bottom line: Saying "no" is an option you need to exercise regularly in order to focus on what's most important. The feeling of freedom you get from it can be powerful.

Mary Jo Asmus is an executive coach and a recovering corporate executive who has spent the past ten years as president of Aspire Collaborative Services (www.aspire-cs.com), an executive-coaching firm that manages large-scale corporate-coaching initiatives and coaches leaders to prepare them for bigger and better things.



Now Is A Great Time To Check Expiration Dates By Tara Pfarner

Some very important items in your home have expiration dates and you may not even know it. You take the time to check your smoke alarm batteries at least twice a year (or you should!) so be sure to check these items as well. These simple inspections could save you a lot of headaches and even save a life. Since we're stuck in the house during these last few months of winter, why not use this time to check the expiration dates on these common household items?

Smoke Alarms - There is an expiration date printed on the back, usually near the battery compartment. If you can't read it, don't know how old the unit is, or if you know it's more than ten years old, replace it. Even if it works when you test it, it's only telling you that there is power to the alarm, not that the sensors are accurate and will function properly when needed. Battery-operated and hard-wired alarms alike expire; according to the Kentucky Injury Prevention and Research Center, a ten year old smoke alarm has a 30% chance of alarm failure.

Change smoke alarm batteries twice each year - many people do it when the time changes since it's an easy way to remember. Check batteries in all alarms each month, and be sure that you have the right type and number of alarms for your home or business.

Carbon Monoxide Detectors - Like smoke alarms, carbon monoxide detectors have an expiration date printed on the back. Their typical lifespan is five to seven years; if it's older than that or the expiration date is unreadable, replace it. In 2009, the New York State Legislature passed Amanda's Law, which requires a carbon monoxide detector to be installed in any dwelling which has gas-emitting appliances or systems, or an attached garage, regardless of the dwelling's purchase or construction date. If your home came with a carbon monoxide detector when you moved in, now would be a great time to check its manufacture/expiration date (and the batteries).

Fire Extinguishers - Most home fire extinguishers have a pressure gauge; if the needle is in the green area, it is functional. Inspect the extinguisher monthly; have it serviced annually. Replace or service your fire extinguisher right away if it has been used (even just a little bit) or if you notice that the hose or nozzle is cracked, ripped, or blocked with debris; the locking pin on the handle is missing or unsealed; the handle is wobbly or broken; or the inspection sticker or hang tag (with record of inspections and maintenance) is missing. Most fire extinguishers have a lifespan of 10-15 years with proper maintenance.

Dryer Venting - Metal venting is necessary for the safe and proper function of your clothes dryer. Nylon, PVC, or any type of plastic pipe is not safe. If you install a good quality metal vent pipe and maintain it properly, it may outlast the dryer with a lifespan of ten years or more. Venting should be cleaned thoroughly every six to twelve months. Inspect for any cracks or separation at joints as well. Have a professional install the vent to ensure that it is done properly. Most service companies will clean your dryer vent if you aren't comfortable doing it yourself. When loading and unloading the dryer, don't lean or push on it as this could cause stress on the vent pipe behind it or even compress it and cause a constriction. Keeping your dryer venting clean and in good condition allows your dryer to work at maximum efficiency, reduces drying time, and more importantly, could prevent a fire.

Washing Machine Hoses - Most washing machine hoses are made of rubber, which deteriorates and cracks over time. The average lifespan is three to five years, (hopefully) shorter than that of the washer itself. Most people don't think about the hoses until there is a problem with them or with the washer and a servicer recommends replacement; however, you can avoid a leak (or a flood) by replacing them as a part of your preventative maintenance routine. Though they are more expensive, you can replace your rubber hoses with braided stainless steel lines. This is recommended especially if your washer is in a finished area of your home.. The stainless steel lines are more durable and can last ten years or more when properly maintained.

Furnace Air Filters - Replacing or maintaining the filter in your heating/air conditioning unit every six months will keep it running efficiently, cut down on failure and maintenance down the road, and keep your air cleaner. If any household members have allergies, you know the importance of keeping this filter clean! If the filter is not cleaned for an extended period of time, it could lead to reduced air flow and in extreme cases, cause a chain of events leading to the release of carbon monoxide into your home.

Car Seats - Many parents and grandparents don't know that car seats and booster seats have expiration dates of six years from the date of manufacture (for most models). This information is stamped or molded into the plastic on the back or underside of the seat. Why would a car seat expire? While not always obvious, the seat's materials can deteriorate over time – the plastic shell and chest clip can develop unnoticed hairline cracks or become brittle and belts can become slightly elastic over time. All car seats in a vehicle involved in an accident should be replaced, whether they were occupied at the time of the accident or not. Most insurance companies will cover this cost. Car seat regulations and standards also change regularly so be sure to keep up on the most recent developments. Your child's car seat is not something to take a chance with.

As they say, an ounce of prevention is worth a pound of cure!

Sudoku Puzzle

Fill in the grid so that every row, column, and 3 x 3 box contains the digits 1-9 without repeating any.

Answer on page 19.

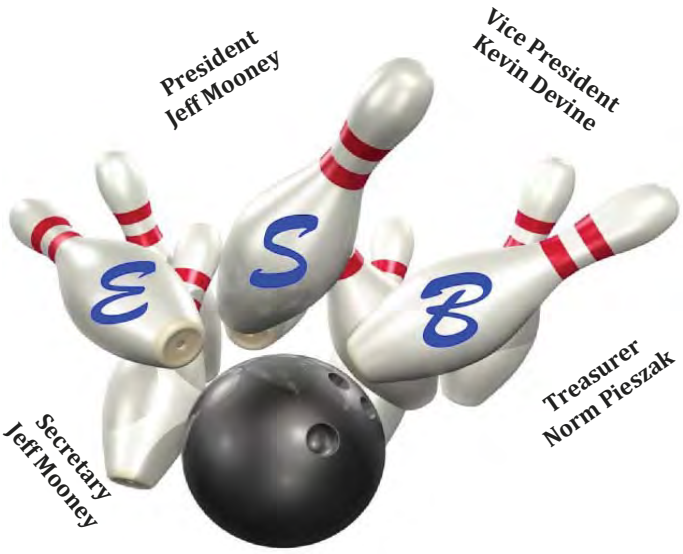
		7		4	8		9	6
5		8			3	7		
6			7			1		
	5		4	8		6		7
	6						2	
2		4	1		6		5	
		6			1	2		
		9	5			3		1
1	2		3		7	4		

Bowling Fun Facts

There is a bowling alley in the White House. It was built in 1947 for President Truman.

Bowling's world governing body is called the Fédération Internationale des Quilleurs.

A regulation bowling lane is 60 feet long.



Team Standings Week 14

		Won	Lost
1.	OUTCASTS	75	51
2.	TRANSMITTERS	71	55
3.	ARCHER IMAGING	70	56
4.	DEAD LOADS	70	56
5.	SPLIT HAPPENS	69	57
6.	CAD/CAMS	63	63
7.	K & K TREATS	62	64
8.	PINHEADS	57	69
9.	PROTRACTORS	51	75
10.	LOOSE CANNONS	42	84

Season Handicap Game

John Grembowicz	315
Todd Huth	307
Ed Kilgore	304

Season Handicap Series

John Grembowicz	843
Shaun Johnston	766
Mike Murphy	766

Cross Alley w/Handicap

George Brown	290

Season Scratch Game

John Grembowicz	290
Todd Huth	287
George Brown	284

Season Scratch Series

John Grembowicz	768
Paul Morrow	735
Tom Mann	706

Individual High Ave Male

Paul Morrow	216.24
Tom Mann	205.95
John Grembowicz	199.17

Individual High Ave Female

Julia Hay	187.48
Chris McDonald	162.60
Kathy Kovacs	142.21

How To Survive Engineering School

By Dr. Richard Felder

Don't take the title of this column literally. Despite the incomprehensible lectures, endless homework, and impossible tests, studying engineering has rarely been fatal. Nevertheless, things may not always go quite the way you would like. Classes with absurd amounts of work and test averages in the 50's are facts of life in engineering. I had lots of classes like that when I was where you are now and I complained about them just as loudly. Unfortunately, while complaining may make you feel better, it won't do a thing for your grades.

I'd like to propose several better ways to help yourself. First though, let me suggest that the real problem may not be that professor who's making your life miserable. It is that over the years you may have unconsciously bought into a message that goes like this: "My teachers know everything I need to know to be an engineer. Their job is to tell it to me in lectures. My job is to soak it up and then repeat it on exams. If I can do that, I've learned it."

Wrong! That approach may have worked in high school but it begins to fail in college. And once you get into the plant or research lab, it stops working completely. Out there, there are no professors, lectures, or texts with worked out examples. The problems don't come neatly packaged with all the information needed to solve them. In fact, often the hardest part of a real problem is figuring out exactly what the problem is.

But you also need to remember this. Around the world, hundreds of thousands of engineers - most no smarter than you, many not as smart - who once struggled with their own confusing instructors and unreadable texts and didn't understand entropy any better than you do, are out there doing just fine. Every day, they figure out what they need to know to solve their problems and then they solve them. If they could learn to do that, so can you. What I'd like to do here is give you five simple tips to help you start learning it now. If you find yourself struggling in classes, give the tips a try. If they work (and I'm pretty sure that they will), you'll have an easier time in school and hit the ground running in your first job.

Tip 1. Figure out what might make course material clearer and try to get it in class. Do you ever find yourself expressing one of these common complaints? "I need practical, real-world applications before I can understand something, but all we get in class is theory." "I want to understand how things work, but all we get are facts to memorize and formulas to substitute into." "I understand what I see - pictures, diagrams, demonstrations - better than what I hear and read, but all we get are words and formulas."

If you do, pay attention to yourself - identifying what you're missing in a course is the first step toward getting it. The obvious next step is to ask your professor, in or out of class, for whatever it may be. Most professors genuinely want their students to learn - that's why they became professors - and often complain that their students rarely ask questions except "Are we responsible for this on the test?" So if you don't understand something, try asking for something that might clarify it. "Could you give an example of how you would use that formula?" "Could you sketch what that device, solution, plot might look like?" "Where did that equation you just wrote come from?" Even if you're afraid a question may sound stupid, ask it anyway. I guarantee that others in the class are equally confused and will be grateful to you for having the courage to speak up. And if you need more help, go to the professor's office and ask for it.

Caution, however. Even instructors who really want to help will get annoyed if they think you're trying to get them to do your homework for you. Never ask your instructor for help on a problem until you have made a serious effort to solve it by yourself. When you ask, be prepared to show what you tried and how far you got. Bring in your flow charts and free body diagrams and calculations, including the ones that didn't work. The more you bring in, the more likely you are to get the help you need.

Tip 2. Read. Some textbooks try to clarify difficult material by giving practical illustrations and explanations. Check out those parts of your text if you're having trouble rather than just searching for solved examples that look like the homework problems. Another good strategy is to look at a second reference on the same subject - a different text, a handbook, or a Web site. Even if you can't find the crystal-clear explanations and examples you'd like, just reading about the same topic in two different places can make a big difference in understanding.

Tip 3. Work with other students. When you work alone and get stuck on something, you may be tempted to give up, where in a group someone can usually find a way past the difficulty. Working with others may also show you better ways to solve problems than the way you have been using. Here are two ideas for making group work effective:

- Outline problem solutions by yourself first and then work out the details in your group. Someone in every group is generally fastest at figuring out how to start problem solutions and does it for every problem when everyone works together. If that student isn't you, you may have to figure it out for the first time on the test which is not a particularly good time to do it. Outlining the solutions before meeting with the group is the way to avoid this disaster.
- Get group members - especially the weaker ones - to explain all completed problem solutions before ending a problem-solving session. If everyone can do that, the session worked.

Continued on page 19

MEETING MINUTES

Attendees: Officers: Plizga, Samol, Scofidio
Board Members: Masse, Mooney, Owens, Sargeamt, Wach
Members: SanFilippo, McMahon

Call to Order: President Matt Plizga called the meeting to order at 6:15pm

Minutes: The Minutes of December were reviewed and approved.

3	1	7	2	4	8	5	9	6
5	9	8	6	1	3	7	4	2
6	4	2	7	5	9	1	3	8
9	5	3	4	8	2	6	1	7
7	6	1	9	3	5	8	2	4
2	8	4	1	7	6	9	5	3
4	3	6	8	9	1	2	7	5
8	7	9	5	2	4	3	6	1
1	2	5	3	6	7	4	8	9

Sudoku answer to page 16

Committee Reports

Advertising: Don Owens will meet with Robin Closs to form strategy
Audit: Steve SanFilippo stated that the audit is coming soon and looking to file 990N form
Bowling: Whiskey shoot was December 18 and bowling on New Year's Day was a huge success
Bylaws: No Report
Education: Don McMahon discussed the changes in the FE and PE exam as well as the low registration for the classes
Endowment: Funds stable for now
Entertainment: No Report
Fundraising: Shirt pricing is being investigated
Golf: Board contact will be Mike Samol
Historian: No Report
Media: Marco Scofidio reported website calendar needs more and advertisements are advancing
Newsletter: No Report
Nominating: Board contact will be Marco Scofidio
Scholarship: No Report
Scholarship Run: Matt Plizga will be chairman and board contact will be Marco Scofidio
Sunshine: Board contact will be Don Owens

Adjournment: The meeting adjourned at 7:17pm.
Next Meeting: Monday February 3, 2014 - Construction Exchange, 2660 William Street, Buffalo NY

Continued from page 18

Tip 4. Consult experts. Sometimes you'll run into a problem that completely stumps you and everyone you're working with. When practicing engineers run into such problems, as they all do occasionally, they consult experts. You also have experts available to you. Your course instructor is an obvious candidate, but that doesn't always work out. Other potential consultants include graduate teaching assistants, other professors who teach the same course, students who have previously taken the course, smart classmates, and tutors. No matter whom you go to, though, go early: waiting until two days before the final exam probably won't cut it.

Tip 5. Believe that you have what it takes to be a good engineer. If this advice is hard for you to take now, you're probably suffering from what psychologists refer to as the Impostor Phenomenon, which is like a tape that plays inside people's heads. If you're an engineering student looking around at your classmates, the tape goes something like this: "These people are good - they understand all this stuff. They really belong here…but I don't. Over the years, I've somehow managed to fool them all - my family, my friends, my teachers. They all think I'm smart enough to be here, but I know better…and the very next hard test or hard question I get in class will finally reveal me as the impostor I am." And what would happen next is too horrible to contemplate, so at that point you just rewind and replay the tape.

What you don't know is that almost everyone else in the class is playing the same tape and the student in the front row with the straight A average is playing it louder than anyone else. Furthermore, the tape is usually wrong. If you survived your first year of engineering school, you almost certainly have what it takes to be an engineer. Just remember all your predecessors who had the same self-doubts you have now and did just fine. You do belong here, and you'll get through it just like they did. Try to relax and enjoy the trip.

Dr. Richard Felder can be reached at www.ncsu.edu/effective_teaching and is a professor of Chemical Engineering at North Carolina State University. He has contributed over 200 publications to the fields of science and engineering and is co-author of the text Elementary Principles of Chemical Processes.

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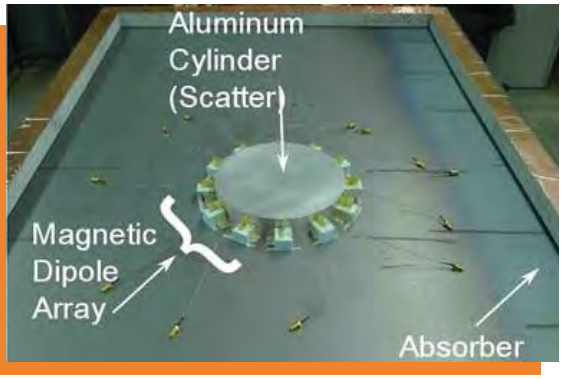
Add some color to your winter by filling a balloon with water, adding a few drops of food coloring, and putting it outside to freeze for a few days. Peel the balloon off and enjoy the intricate ice patterns that have formed, then display outdoors until they melt.

Thin, Active Invisibility Cloak

See Page 1



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