

NEWS

News Blurbs Now! (NBN)

The Engineering Society of Buffalo is searching for volunteers who would be interested in assisting with children's engineering activities at the Buffalo Museum of Science on any day from February 16th to 21st. This is a bit earlier than Engineers Week but it is when most children will be off from school. If you are even a little bit interested in volunteering, please contact Robin Closs at clossr@yahoo.com or 864-4419. Volunteers plus two additional guests will receive free museum admission on the day of volunteering and free parking too!

RJR Engineering, P.C. is proud to be among the first businesses certified as a New York State Service-Disabled Veteran-Owned Business (SDVOB.) Signed into law by Governor Andrew M. Cuomo on May 12 of 2014, the Service-Disabled Veteran-Owned Small Business Act allows eligible business owners to become certified as a SDVOB in order to increase participation in New York State's contracting opportunities. The Act builds on 2013's enactment of the "Hire-a-Vet" business tax credit and ensures that 6% of state contracts go to small businesses owned by service-connected disabled veterans. New York has the fourth highest number of veteran-owned businesses trailing only California, Texas, and Florida. One in seven of those veterans is self-employed or a small business owner. You can learn more about the act at <http://ogs.ny.gov/Core/SDVOBA.asp>.



Certified Service-Disabled Veteran-Owned Business

RJR Engineering, P.C. is pleased to announce the addition of **Thomas R. Gilmartin PE, LEED AP** to their staff as a Principal Engineer. Tom started his career in robotics and then moved on to the power and controls industry. He is also active in the Buffalo chapter of the Project Management Institute, serving as the Director of Finance.

Picone Construction has been selected as the Design/Builder for WKBW TV's newsroom renovations. Additionally, they have completed renovations to West Herr Chevrolet located at 8040 Transit Rd in Williamsville. Renovations included a reconfiguration of the show room and office space. Updates included installation of walls, ceramic floors, carpeting, and vinyl composition tile; implementation of a new color scheme; renovation of the interior service area; and upgrades for handicap accessibility. Exterior updates to signage, sidewalks, and a parking area were also performed. The Architect of Record was Silvestri Architects, PC and the Mechanical/Electrical Engineer was EBS Engineering. Picone has added to their team with hiring Mark Gerard as a project manager and Jonathan Bates as a new project clerk.



Safety training can be...shall we say...not always the most stimulating activity. **OSHA's** Directorate of Standards and Guidance, with assistance from the Directorates of Training and Education and Construction and input from industry and labor, has developed a new Hazard Identification Training Tool designed to make learning a little more fun. The online, game-based training tool (<https://www.osha.gov/hazfinder/>) will help users to better identify hazards in the workplace. It also aims to educate about some of the resources available on OSHA's website. The program's intended audience is small business owners, workers, and others interested in learning the core concepts of hazard identification.

Arizona's Interstate 19 is a reminder of a failed experiment to convert the United States to the metric system. When signs along the 63-mile route from Tucson Arizona to Mexico were installed in 1980, the country was in the midst of the Metric Conversion Act, a voluntary effort to convert every label in the country to the metric system. I-19 became a part of that initiative and has remained so ever since. Despite a failed attempt at re-conversion in 2010, the stretch of highway is still a math test for travelers. Because hotels, restaurants, and other businesses advertise their distances from exits in kilometers, they are quite opposed to the switch due to the cost and effort of changing their signage and advertising. There would also be considerable expense to change the 400-some signs along the highway itself.

UB's "Space Bulls" have been chosen, for the fourth time in five years, to participate in the RASC-AL Exploration Robo-Ops. The team will be designing and building a remote-controlled model rover and navigating the rover through a series of obstacles that simulate conditions on Mars and the moon. While the actual competition will take place at a facility at NASA's Johnson Space Center in Texas, students must control the rover remotely from their school. The students whose rover successfully navigates the most challenges wins the contest which includes cash prizes and, of course, bragging rights. Good luck!

The mayor of Syracuse, Stephanie Miner, has proposed the "**Syracuse Billion Agenda**" which would invest \$1 billion in the city's infrastructure. "This is an opportunity to put a stake in the ground and say when you invest in infrastructure, you build a foundation for the future," she said. "We will build systems that give us a competitive advantage."

Assist in the development of an IMAX movie entitled "Dream BIG" that will hopefully highlight some pretty good engineering feats. Have suggestions? Share them at message.asce.org/DreamBIGsurvey and they might just make it into the film!

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 news to ESB1894@gmail.com.

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PRESIDENT'S MESSAGE



Apologies and Praise

Back at the Past Presidents Dinner, we awarded this year's 2015 scholarship winners. The scholarship winners are Emily Belote, Jacob Fijas, and Jake Schoelles. These fine students represent some the best of our area and will serve the profession well. The winners along with our other nine past awardees were issued scholarship checks for the benefit of their education. Through a series of unfortunate events, too complicated and embarrassing to recount, our recipient winners did not receive their scholarship award until two months later. This should not have happened and is not an example of what The Engineering Society stands for. Many lessons have been learned including that we should have communicated better and acted faster. Please accept our sincerest apologies for any problems and inconvenience that we may have caused.

Mistakes are the usual bridge between inexperience and wisdom – Phyllis Theroux

This past January 8th, The Engineering Society had the first networking party of the year at the new Resurgence Brewery in downtown Buffalo. Resurgence Brewery is

another sparkling gem in the growing list of places worth visiting in the downtown area. For a while, it looked like the event would not happen. It was snowing heavily that morning and the night was fraught with the potential of lake effect. In spite of the risk of inclement weather, we had over forty people attend. Between the good drinks, great place, and the fellowship of many old and new friends a great time was had by all.

Personal relationships are always the key to good business. You can buy networking; you can't buy friendships. - Lindsay Fox

The networking event was sponsored by Earth Dimensions, Eberl Iron Works, EGW Personnel Staffing, Dwight Moldenhauer, and SJB Services to whom we thank. Also, in this age of time property, I would like to give a special thank you to Matt Plizga, our past president, who single handily took the time to pull the event together. Job well done and I hope to see more members at the next one later this year.

Marco Scofidio PE
ESB President
mscofidio@gmail.com

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CALENDAR OF EVENTS

01-28-15	5:30pm	InfoTech Networking Social	49 Illinois St, Buffalo (Iron Works)
02-03-15	3:30pm	Job Search Strategies for STEM Majors	UB North Campus
02-09-15	6pm	Ways and Means Meeting	562 Genesee St, Buffalo (DNIPRO Ukrainian)
02-09-15	7pm	Directors Meeting	562 Genesee St, Buffalo (DNIPRO Ukrainian)
02-14-15	2pm	UB Bulls vs Central Michigan Basketball	Game & Complimentary Pre-Game Party
02-16-15 to 02-21-15		Volunteers for Engineer Week Needed	Buffalo Museum of Science
02-23-15		Automation 101 Technical Seminar	
03-09-15	6pm	Ways and Means Meeting	To Be Determined
03-16-15		GM Powertrain Plant Tour by ISA	Tonawanda



NEXT BIG ESB EVENT

ESB Needs You!

We are seeking candidates to run in the ESB yearly election which typically occurs in May. Would you be interested in becoming a director on the board of The Engineering Society of Buffalo? Gain leadership experience. Craft the future direction of the society. Create lasting business relationships. The board meets monthly typically on a Monday evening.

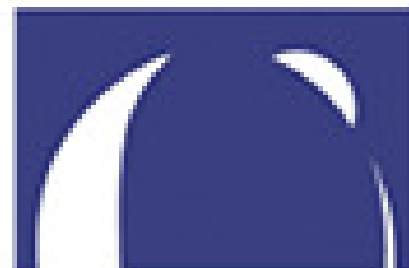
Know who would be perfect for the board? YOU!

Contact Ron Papaj at rpapaj@aptechsearch.com or 716-635-0290 to find out how to get your name on the ballot. No experience is required.



Once again, The Engineering Society of Buffalo will be assisting with activities at the Buffalo Museum of Science in February. The dates are slightly different from Engineers Week so the activities can occur when children are off from school. Would you be able to donate a few hours to bring some engineering fun into kids' lives? Contact Robin M Closs at clossr@yahoo.com or 716-864-4419 if interested! Available dates are from February 16 thru February 21.

BUFFALO
MUSEUM
of SCIENCE



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TECH ARTICLE

Watts Up, Airplanes Go Hybrid Electric

Researchers from the University of Cambridge, in association with Boeing, have successfully tested the first aircraft to be powered by a parallel hybrid-electric propulsion system, where an electric motor and petrol engine work together to drive the propeller. The demonstrator aircraft uses up to 30% less fuel than a comparable plane with a petrol-only engine. The aircraft is also able to recharge its batteries in flight, the first time this has been achieved.

The demonstrator is based on a commercially-available single-seat aircraft, and its hybrid engine was designed and built by engineers at Cambridge with Boeing funding support. The aircraft uses a combination of a four-stroke piston engine and an electric motor/generator, coupled through the same drive pulley to spin the propeller. During take-off and climb, when maximum power is required, the engine and motor work together to power the plane, but once cruising height is reached, the electric motor can be switched into generator mode to recharge the batteries or used in motor assist mode to minimize fuel consumption.

The same principle is at work in a hybrid car. "Although hybrid cars have been available for more than a decade, what's been holding back the development of hybrid or fully-electric aircraft until now is battery technology," said Dr Paul Robertson of Cambridge's Department of Engineering, who led the project. "Until recently, they have been too heavy and didn't have enough energy capacity. But with the advent of improved lithium-polymer batteries, similar to what you'd find in a laptop computer, hybrid aircraft – albeit at a small scale – are now starting to become viable."

The hybrid power system in the Cambridge demonstrator is based on a Honda engine, in parallel with a custom lightweight motor. A power electronics module designed and built in the Engineering Department controls the electrical current to and from the batteries – a set of 16 large lithium-polymer cells located in special compartments built into the wings. The petrol engine is optimally sized to provide the cruise power at its most efficient operating

point, resulting in an improved fuel efficiency overall.

"Our mission is to keep our sights on finding innovative solutions and technologies that solve our industry's toughest challenges and continually improve environmental performance," said Marty Bradley, Boeing's principal investigator for the program. "Hybrid electric is one of several important elements of our research efforts, and we are learning more every day about the feasibility of these technologies and how they could be used in the future."

While the Cambridge demonstrator is an important step in the development of hybrid or fully-electric aircraft, more research is required before commercial airliners will be powered entirely with electric motors. For example, if all the engines and all the fuel in a modern jetliner were to be replaced by batteries, it would have a total flying time of roughly ten minutes.

Test flights for the project took place at the Sywell Aerodrome, near Northampton. These tests consisted of a series of 'hops' along the runway followed by longer evaluation flights at a height of over 1,500 feet. Robertson's team, which includes PhD students Christian Friedrich and Andre Thunot and MEng student Tom Corker, is conducting ongoing test flights to characterize and optimize the system for best performance and fuel economy.

The Intergovernmental Panel on Climate Change (IPCC) estimates aviation is responsible for around 2% of global man-made carbon dioxide emissions. The aerospace industry made global commitments to take action that will see carbon neutral growth from 2020 and a net reduction in CO2 emissions of 50% by 2050 compared to 2005 levels. Boeing is a member of Sustainable Aviation (www.sustainableaviation.co.uk), which is responding to these goals in the UK.

This press release appeared on the University of Cambridge's website <http://www.cam.ac.uk/research/news/watts-up-aeroplanes-go-hybrid-electric> and is reprinted in accordance with the terms of the Creative Commons License it is published under.

JANUARY BIRTHDAYS

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REBECCA WIGHTMAN PE

STEPHEN F GAWLIK

JOHN MAYER

ANTHONY J CERVI

JOHN EARSHEN



STUDENT INFO

The College Student's Guide To A Winning Resume

By Deborah Federico

Gone in sixty seconds. Recruiters spend less than a minute reviewing your resume. With a stack of resumes to review, recruiters naturally want to make their workload easier, tossing bad resumes right off the bat. Reasons for your resume to be quickly tossed into the "No" pile: Typos, misspellings, mismatched fonts, a sloppy appearance. Even a resume that's too text heavy or runs onto two pages will get thrown into the discard pile.

Every time I teach my class on resume writing, I always start the lecture with the question, "What is the goal of a resume?" Is it "to get a job?" as most students will answer? To them, I say, "No, that's not it. Eventually, someone guesses the real goal of a resume: to get an interview. I make the marketing analogy that the resume is an advertisement about you and you need to make the most of that 8.5-by-11-inch sheet of paper. Sell yourself to the employer by convincing them that you're the best candidate to bring in for the interview.

So, what can you do to increase the chances that your resume will be read by the recruiter? Follow my "lucky 13" tips outlined below, and you will produce a winning resume that not only gains the attention of the recruiter, but also garners his or her admiration. Pretty soon your phone will be ringing with calls from recruiters inviting you in for an interview.

Length: Keep your resume to one page. No exceptions.

Formatting: Your resume should look clean and readable with plenty of white space to make it inviting. Keep the font size consistent and use bolding or italicization for effect. Stay away from cutesy fonts or graphics. Some students will tell me that they want to get attention that way. I tell them that the only attention they get will be the negative kind. Put your energies into the content.

Contact information: Make sure your email address is professional. Sticking with your name is the best bet. Again, this is not the place to be creative by using addresses like "surferdude87" or "hotchick143." Put both your permanent address and school address on your resume. If you have room for only one, put the address that's closest to the job location. I worked with a student once who wasn't getting any interviews despite having a terrific resume. The problem? She had

put her home address in New Jersey down while applying for full-time positions in Boston.

Use bullet points: I highly recommend using bullet points on your resume. Stick with the standard kind of bullets. If you decide to use paragraphs, make sure you write concise readable prose.

(Okay, by now you're probably thinking, "How will I get my resume to stand out if it's just like everyone else's?" Just keep reading...)

Use action statements: That means starting each bullet point with an active verb (avoid words like "assisted," "helped," "worked" or "aided"). Use verbs that are relevant to your industry, e.g. "design" or "create" for the fashion industry or "calculate" or "audit" for the accounting field.

Avoid laundry lists: Don't use phrases like "responsibilities or duties included," then proceed to list everything you did at a particular job in one long bullet point. First of all, this is boring to read and, secondly, you're shortchanging yourself. When I work with students on dissecting these long statements, we very often break them into two or three active statements, highlighting accomplishments, results, and purpose.

Quantify when possible: Numbers always make a point stronger. For example, instead of saying something like, "service customers by answering questions, selecting appropriate merchandise, and processing sales on register in order to meet sales goals," try, "service 50 customers per shift by answering questions, selecting appropriate merchandise, and processing sales on register in order to consistently meet and surpass daily sales goal of \$500."

Highlight accomplishments and results: In the example above, the accomplishment is that this student consistently met the sales goal of \$500. When writing your bullet points, think about what you accomplished or achieved. If you were a tutor, did you help students improve their test scores? If you were a server in a restaurant, did your persuasive upselling techniques result in increased profits for the restaurant? To make your statements even more powerful, start with the accomplishment, e.g., "Achieved highest monthly sales out of 10 salespeople by...."

Continued on page 19

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://continuingeducation.zweigwhite.com	Free
All	Varies	Online	Multiple at http://aspe.org/webinararchives	\$130
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	Varies	Online	Multiple at http://bdcuniversity.com	Free
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All	N/A	Online	OSHA 10-Hour Course	\$60
All	2.0	Online	Communicating to a Non-Technical Audience (ASME)	\$95
01/15/15	1.5	Webinar	Behavior & Design of Cast-In-Place and Mechanical Expansion Anchors	\$275
01/15/15	1.5	Webinar	How to Review a Lift Plan	\$349
01/20/15	1.5	Webinar	Design Examples Using the ACI Anchorage Provisions	\$275
01/21/15	?	Amherst	Geologic & Geotechnical Aspects of the Maid of the Mist Drydock Project	\$30
01/21/15	1.5	Webinar	Design of Concrete Embedments	\$349
01/21/15	6.0	Amherst	High-Performance, Energy Efficient, "Green" Heating Systems	\$269
01/23/15	1.5	Webinar	Design of Foundations for Equipment Support	\$349
01/27/15	1.0	Webinar	Wind: Small Wind Energy System Components	\$100
01/28/15	6.5	Amherst	Structural Forensic Engineering	\$269
01/29/15	1.5	Webinar	Designing for Flood Loads Using ASCE 7 and ASCE 24	\$349
01/29/15	2.0	Webinar	Tools for Pedestrian and Bicycle Volume Data Collection	\$89
02/02/15	1.5	Webinar	Investigation and Repair of Fire-Damaged Framing	\$349
02/09/15	1.5	Webinar	Maintenance Training and Certification Programs-Highway Maintenance	\$89
02/10/15	1.5	Webinar	Practical Solutions to Frequently Asked Welding Questions	\$275
02/10/15	1.5	Webinar	Deterioration and Repair of Concrete	\$349
02/11/15	1.5	Webinar	Planning for Safety Considerations on Airfields	Free
02/13/15	1.5	Webinar	Strengthening Structural Steel Beams	\$349
02/18/15	1.0	Webinar	Approving or Selecting Building Products with Confidence	Free
02/18/15	1.5	Webinar	Verification of Computer Calculations by Approximate Methods	\$349
02/20/14	6.0	White Plains	Legal and Ethical Issues for New York State Engineers	\$269
02/26/15	1.5	Webinar	The Structural Engineer's Role in Building Community Resilience	\$275
02/27/15	7.0	Depew	E-Week Seminar Series by NSPE	\$239
03/16/15		Tonawanda	GM Powertrain Plant Tour	
03/31/15	1.5	Webinar	AWC's 2015 Special Design Provisions for Wind & Seismic-Overview & Changes	\$275
04/21/15		Amherst	ISA Tech Expo	
05/20/15	1.0	Webinar	Approving or Selecting Building Products with Confidence	Free



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New, High-Energy, Rechargeable Batteries

By Stuart Licht & Christopher Rhodes

While electric vehicles offer many advantages (including reducing greenhouse gas emissions and the country's dependence on imported petroleum) at least one barrier stands in the way of their large-scale adoption: "range anxiety." The current 2014 electric Nissan Leaf, for example, has a range of just 84 miles on a fully charged battery.

With support from the National Science Foundation, researchers at George Washington University think they have developed a novel solution, and they're calling it the "molten air battery." These new rechargeable batteries, which use molten electrolytes, oxygen from air, and special "multiple electron" storage electrodes, have the highest intrinsic electric energy storage capacities of any other batteries to date. Their energy density, durability, and cost effectiveness give them the potential to replace conventional electric car batteries, said Licht, a professor in GWU's Columbian College of Arts and Sciences' Department of Chemistry.

The researchers started with iron, carbon or vanadium boride for their ability to transfer multiple electrons. Molten air batteries made with iron, carbon or vanadium boride can store three, four and eleven electrons per molecule respectively, giving them 20 to 50 times the storage capacity of a lithium-ion battery, which is only able to store one electron per molecule of lithium. "Molten air introduces an entirely new class of batteries," Licht said.

Other multiple-electron-per-molecule batteries the Licht group has introduced, such as the super-iron or coated vanadium boride air battery, also have high storage capacities. But they had one serious drawback: They were not rechargeable. Rechargeable molten batteries (without air),

such as a molten sulfur battery, have been previously investigated, but are limited by a low storage capacity.

The new molten air batteries, by contrast, offer the best of both worlds: a combination of high storage capacity and reversibility. As the name implies, air acts as one of the battery electrodes, while simple nickel or iron electrodes can serve as the other. "Molten" refers to the electrolyte, which is mixed with reactants for iron, carbon or vanadium boride, then heated until the mixture becomes liquid. The liquid electrolyte covers the metal electrode and is also exposed to the air electrode.

The batteries are able to recharge by electrochemically reinserting a large number of electrons. The rechargeable battery uses oxygen directly from the air, not stored, to yield high battery capacity. The high activity of molten electrolytes is what allows this charging to occur, according to Licht.

The electrolytes are all melted to a liquid by temperatures between 700 and 800 degrees Celsius. This high-temperature requirement is challenging to operate inside a vehicle, but such temperatures are also reached in conventional internal combustion engines. The researchers continue to work on their model to make the batteries viable candidates for extending electric cars' driving range. In the Licht group's latest study, the molten air battery operating temperature has been lowered to 600 degrees Celsius or less. The new class of molten-air batteries could also be used for large-scale energy storage for electric grids. "A high-temperature battery is unusual for a vehicle, but we know it has feasibility," Licht said. "It presents an interesting engineering question."

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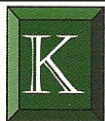
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The Country's Longest Mass Transit Systems

By Tara Pfarner

Buffalo's own Metro Rail carries passengers 6.4 miles from end to end. Have you ever wondered how heavy rail rapid transit systems in other cities compare?

10. Metro Rail	Los Angeles	17.4 miles
9. RTA Rapid Transit	Cleveland	19 miles
8. Metrorail	Miami	24.4 miles
7. SEPTA	Philadelphia	36.7 miles
6. MBTA Subway	Boston	38 miles
5. MARTA Rail System	Atlanta	47.6 miles
4. 'L'	Chicago	102.8 miles
3. Bay Area Rapid Transit	San Francisco	104 miles
2. Washington Metro	Washington, DC	117 miles
1. New York City Subway	New York City	232 miles

In addition to being the longest, the New York City Subway is one of the oldest public transportation systems in the world. How does it work? A combination of interlocking, signaling, wayside train protection, and wayside speed control layouts ensure the safe operation of the NYC Subway. Subway trains are stopped mechanically at all signals showing "stop" aspects by automatic train stops located on the right side of IRT tracks and the left side of BMT/IND tracks; all cars are equipped with tripcocks. Speed control on the subway is ensured by "Time

Signals". A timer is started as soon as the train passes a certain point and will clear the signal ahead as soon as the predefined time elapsed; the minimum time is calculated from the speed limit and the distance between start of timer and signal. "Time Signals" are distinguished into "Grade Timer" for speed supervision at grades, curves, or in front of buffer stops, and in "Station Timer" for low-speed entrance into stations in order to reduce train headways. Like the railways, the subway used mechanical interlocking in its early days and introduced relay interlocking later. Computer-based interlockings are state-of-the-art systems offering additional functions. But independently from the applied technology, the interlocking logic stayed the same: "Control lengths" along the selected route to be set until the target signal plus an additional overlap (safety distance) must be clear of any trains or cars to be able to clear the signal for the according route and target signal. "Single line signal diagrams" show all defined "control lengths" (and routes) for each interlocking tower.

Information from Wikipedia.org.



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Getting Your Business To Grow & Lead Generation

By Frank Ricard

When your business depends upon getting new leads regularly, there are some options that are open to you which can help you to achieve it. In today's technologically advanced climate, there are many businesses that tend to focus on electronic means of contacting potential customers, such as through social media or email marketing. Although these can be effective, you should never overlook the possibility of direct mail and using those lists in order to increase the success of your business substantially. Here are some of the benefits that will be seen when you use this type of marketing and mail your list physically instead of automatically.

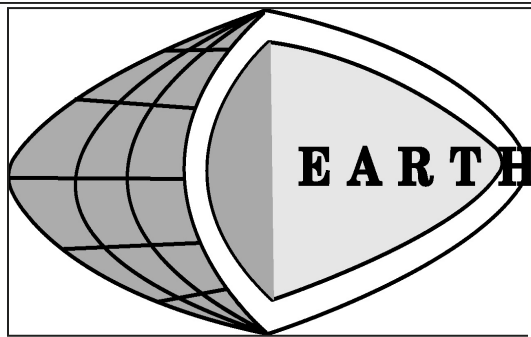
Perhaps one of the most important things that need to be considered when choosing direct mail over email marketing is that the majority of people look at their mail that they get in their mailboxes every day. Of course, some people are going to toss some of the information without looking at it but a vast majority of those individuals are going to sort through it without delay. This gets your message in front of those individuals easily and, compared to email marketing, the response can be substantially higher.

Another benefit to using direct mail is that you can specifically target groups of people that have an interest in what you are offering. It is important for you to consider this, not only when using direct mail but when purchasing the list of individuals that you will be mailing. The more focused the list is, the more likely it is going to be that you are going to see results from that list.

Have you thought about the customization that is possible when mailing to people instead of using electronic means of contacting them? When most people gather email lists, they are only going to gather the most basic information from the potential customer. When you have a mailing list, you not only have the physical address but you often have their name and perhaps some other information as well. You can use this information in order to customize the mailing which will, in turn, increase the response. This is also something that should be considered when you are gathering a list or purchasing it from the company that generates leads.

Finally, you can measure the results of mailing those individuals in order to see if any changes need to be made to the mailing. Of course, you would always want to consider changing the copy and testing in order to increase the response. Some of the ways that you can track the response of a direct-mail campaign include sending out coupons with specific information that either needs to be filled out on your website or to be mailed back to your company. This can assist you in doing a split test as well, allowing you to easily see which is going to be more effective so that you can make those changes and send the future mailings to a larger list to increase the response.

Frank Ricard is the author of this article about direct mailing lists. Frank has extensive experience as a writer and entrepreneur and knows how powerful a good marketing list can be. Visit <http://www.promarketingleads.net>. This article is reprinted from http://www.articlecity.com/articles/business_and_finance/article_16028.shtml.



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MEETING MINUTES

Attendees: Officers: SanFilippo, Samol, Scofidio
Board Members: Bandriwsky, Kolber, Masse, Mooney, Plizga, Wach
Members:
Call to Order: President Marco Scofidio called the meeting to order at approximately 6:20pm
Minutes: The minutes of the November meeting were read aloud and approved

Committee Reports

Advertising: Mike Samol would like a copy of our membership directory to be used as a contact list for advertising.
Audit: Audit to be performed by Steve San Filippo, Robin Closs and Marco Scofidio in January
Bowling: Turkey shoot went well with four extra turkeys left over. Must not have been taken by winners. Next event is December Whiskey Shoot.
Bylaws: No report
Education: FE review course started with eight members. An overview of how revenue and expenses are split between PE, UB, and ESB was given. PE review course to start on Jan 15 if enough people sign up. The review course cost \$900 per person, which includes the review material and book.
Endowment: No report
Entertainment: Will have a post-holiday networking party to be set up by Matt at Resurgence Brewery. Then next event will probably be a tour. Looking at Wendt Corporation as a possible tour site. Marco to inquire. Need to develop other options like River works, HarborCenter, etc.
Fundraising: Looking for corporate sponsors for the post holiday networking party. If 30 individuals show up for party, the brewery will not charge a room fee. Will place sponsor logos on display boards.
Golf: No report
Historian: No report
Media: Minor updates to website. Marco Scofidio to cross train Mike Samol on Website management.
Newsletter: November Newsletter was not sent out. Being held for December newsletter.
Nominating: No report
Scholarship: No report
Scholarship Run: No report
Sunshine: No report
Youth membership: Need chair and champion. Marco to contact an interested member.

Adjournment: The meeting adjourned at approximately 7:00pm
Next Meeting: Monday January 12, 2015 Wendt Corporation 2555 Walden Ave, Buffalo NY

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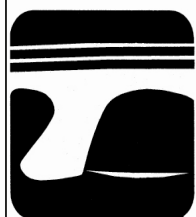
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Swedish Lemon Angels

By Dan Lewis

"This" is a recipe for a dessert called Swedish Lemon Angels. You can find a version on many of the recipe sites out there, but let's use the one from Food.com. It calls for an egg, a half-cup of buttermilk, five teaspoons of baking soda, a half teaspoon of vanilla, a cup of lemon juice, a cup and a quarter of sugar, 7/8ths of a cup of all-purpose flour, and eight tablespoons of melted butter or margarine (take your pick). The directions are pretty straight forward too. Here are the first five, again via Food.com:

1. In a small bowl or 2-cup measuring cup, beat the egg until foamy.
2. Add buttermilk and vanilla and blend well.
3. Add the baking soda, one teaspoonful at a time, sprinkling it in and beating until the mixture is smooth and the consistency of light cream.
4. Add the lemon juice all at once and blend into the mixture.
5. Stir, do not beat (you want it creamy but without a lot of air).

You can read the rest if you want, but there's really no reason. You won't get to step six. You may not even get a chance to complete step five. That's because the recipe will self-destruct. By design, in fact. The original recipe for Swedish Lemon Angles comes from a book titled "Penn and Teller's How to Play with Your Food." (If you're not familiar with them, Penn and Teller are comedian-magicians. Teller has a really neat trick called Shadows which you can watch on YouTube. It's great.) And as the book notes, while the recipe looks legitimate, it isn't -- it's "a malicious prank." Specifically, "anyone who tries to make Swedish Lemon Angels will end up with a kitchen

counter full of lemon-egg foam ten seconds after completing step #4."

Why? Science!

Lemon juice is an acid. Baking soda is a carbonate -- sodium bicarbonate. Mix the two and they react, and the resultant reaction leads to a lot of carbon dioxide bubbling out from a lemon-scented watery mix. There are plenty of examples of that on YouTube, if you want to see it happen. Basically, it foams over, and quickly. If your mixture also has eggs and buttermilk and vanilla, it's still going to bubble over -- and it's going to be a sticky, smelly mess.

But if you go to the recipe on Food.com, you'll notice that while the ingredients and directions (and even the nutritional information!) for Swedish Lemon Angels are on the page, there's nothing there -- at least not as of this writing -- which warns unsuspecting bakers of the disaster about to befall their kitchens. That's not all that rare. Since "How to Play with Your Food" came out in 1992, the recipe has made its way into other publications, and with the advent of the Internet, has proliferated online. For example, you can find it on both Epicurious and RecipeLand, although in both cases, a helpful commentator has stopped by to warn would-be victims of the prank.

So yeah, don't try this recipe at home. Have a friend do it at their house, instead.

You can read more from Dan Lewis at NowIknow.com. Subscribe to his newsletter for a daily dose of knowledge.



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NCCCO Developing New Certifications

By Graham Brent

In partnership with the Pile Driving Contractors Association (PDCA), the National Commission for the Certification of Crane Operators (NCCCO) is developing a new certification for operators of dedicated and purpose-built pile driving rigs.

The move reflects NCCCO's continued expansion into a broader array of certifications as the organization enters its 20th year of existence. The goal is to provide a diverse set of certifications that encompasses the construction industry's many specialized equipment operating activities and provide the same safety, insurance, and risk reduction benefits that NCCCO's other certification programs have delivered since 1995.

Joel Oliva, director of operations and program development at NCCCO, said the key to creating a top-notch certification program is to call on a wide range of experts. "The new program - which will be made available in early 2016 - will draw on industry support, subject matter expertise, and psychometric guidance," he said. "All the elements of this new Pile Driving Rig Operator certification will be developed according to the same strict standards that have become a hallmark of all CCO certification programs."

NCCCO and PDCA have joined forces to create a task force to define the knowledge and skills required for certification. Staff from the two organizations, along with representatives from manufacturers, equipment suppliers, contractors, service providers, and safety personnel, as well as other expert volunteers, will work together over the next year to develop the program. Content for the exam will be based on field experience. As with other CCO certification programs, a professional job task analysis will serve as the foundation to the examinations, ensuring its development is informed by the best practices of real-world applications. The project is being guided by psychometric consultants from the International Assessment Institute

(IAI), the testing services company used by NCCCO since 1999. "As we always guarantee with CCO certifications, the new Pile Driving Rig Operator program will be fair, valid, reliable, and legally defensible," Oliva said.

Not to be confused with the existing CCO lattice boom mobile crane certification that covers pile driving operations through crane attachments, the Pile Driving Rig Operator program will deal with equipment used in the construction industry for the express purpose of driving piles.

The program will consist of both written and practical examinations that will be administered by independent third-party examiners trained and authorized by NCCCO, thus ensuring both NCCCO and PDCA remain free of any conflict of interest with respect to the certification decision. Successful completion of both written and practical elements will result in eligible individuals being certified to operate dedicated pile driving rigs.

Stevan Hall, executive director of PDCA, said that NCCCO's track record of success and industry acceptance had weighed heavily in its favor when being evaluated for a potential partnership. "NCCCO's expertise in the development of operator certification programs for the crane and heavy equipment industries, as well as the widespread adoption of its programs throughout these industries, are two of the many reasons PDCA believes that NCCCO is the ideal organization to develop and administer this new program."

The National Commission for the Certification of Crane Operators (NCCCO) is an independent, non-profit organization established in 1995 by industry to develop and administer a nationwide program for the certification of crane operators and related personnel. Since then, NCCCO has administered over 850,000 nationally accredited written and practical examinations and issued more than 240,000 certifications in all 50 states.

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How Can Engineers And Others Help Lake Erie?

By Terry H. Martin

Engineers are among the key professionals in Western New York who have the capabilities and opportunities to make a difference in the clean-up and restoration of Lake Erie for future generations.

Canada and the United States signed a new, updated binational agreement on September 7 of 2012 to begin implementing the full array of actions that are needed to clean-up and restore Lake Erie and its beneficial uses for future generations. The Great Lakes Water Quality Agreement of 2012 (GLWQA 2012), which became effective in February 2013, created the new binational Great Lakes Executive Committee (known as GLEC). It also created ten implementation annex subcommittees (and subsequent, supporting work groups). Members of those annex subcommittees are recruited by GLEC from Environment Canada, the U.S. EPA, First Nation and Native American Tribes, provincial and state environmental agencies, and other key stakeholders around each of the five Great Lakes.

These ten annexes will structure all future actions to clean-up and restore Lake Erie and its many beneficial uses for future generations. The mechanism for doing this is called the Lake Erie Lake Management Plan (LAMP), which was first published in 2008-09 and updated in 2013. Future updates will

be conducted every four years.

The GLWQA 2012 also requires robust public consultations at all levels, and this includes all stakeholders in the Lake Erie sub-basin of the Great Lakes Basin. These public consultations are a focus of my latest article on the Lake Erie Binational Public Forum website, where my Guest Co-Author George McKibbin and I encourage planners, architects, and engineers in Canada and the U.S. to become aware of, and participate in, Lake Erie clean-up and restoration efforts.

Our joint article can be found on the Lake Erie Binational Public Forum's lakeerieforum.org website. It's called, LakeErieFuturesBlog Seven. We extend an invitation to planners, architects, and engineers to learn more about, and perhaps become active in the Lake Erie LAMP and the many binational efforts to keep it healthy for the long term. If you register on the lakeerieforum.org website, you can leave comments at the end of each of the seven LakeErieFuturesBlog articles. A wealth of other information can be found on this website with regard to Lake Erie and the Great Lakes, including more details on the Lake Erie LAMP.

Terry H. Martin is the author of LakeErieFuturesBlog on the lakeerieforum.org website and a charter member of the Lake Erie LAMP Binational Public Forum (1995 to Present).

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New Investments in Advanced Nuclear Power Reactors

As part of the President's all-of-the-above energy approach and Climate Action Plan, the Energy Department announced awards for five companies to lead key nuclear energy research and development projects supporting advanced reactor technologies. These projects will receive \$13 million in cost-share agreements to help address significant technical challenges to the design, construction and operation of next generation nuclear reactors, based off needs identified by industry designers and technical experts.

"This type of public-private research in advanced nuclear reactors will help accelerate American leadership in the next generation of nuclear energy technologies, and move the United States closer to a low carbon future," said Energy Secretary Ernest Moniz. "These types of investments are crucial to the continuing role of nuclear power as a significant contributor to the U.S. energy economy."

The Department began this program in 2013 to partner with industry in developing next generation reactors that have the potential to achieve significant advances in safety, efficiency and economics. The companies receiving federal investments are:

AREVA Federal Services partnering with TerraPower

Company, Argonne National Laboratory (ANL), and Texas A&M University - Modeling and simulation for longer life cores: Thermal Hydraulic simulations and experimental investigation for liquid metal cooled fast reactor fuel assemblies

GE Hitachi Nuclear Energy partnering with ANL - Development and modernization of next-generation probabilistic risk assessment methodologies

General Atomics partnering with the University of California at San Diego and the University of South Carolina - Fabrication and testing complex Silicon Carbide structures pertinent to advanced reactor concepts

NGNP Industry Alliance partnering with AREVA, UltraSafe Nuclear Company, Westinghouse, and Texas A&M University - High Temperature Gas Reactor (HTGR) Post-accident Heat Removal and Testing

Westinghouse Electric Company partnering with ANL and the University of Pittsburg-- Development of thermo-acoustic sensors for Sodium-cooled Fast Reactors (SFR)

Find more information at the Department of Energy's Office of Nuclear Energy Website: <http://energy.gov/ne/office-nuclear-energy>



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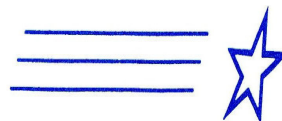
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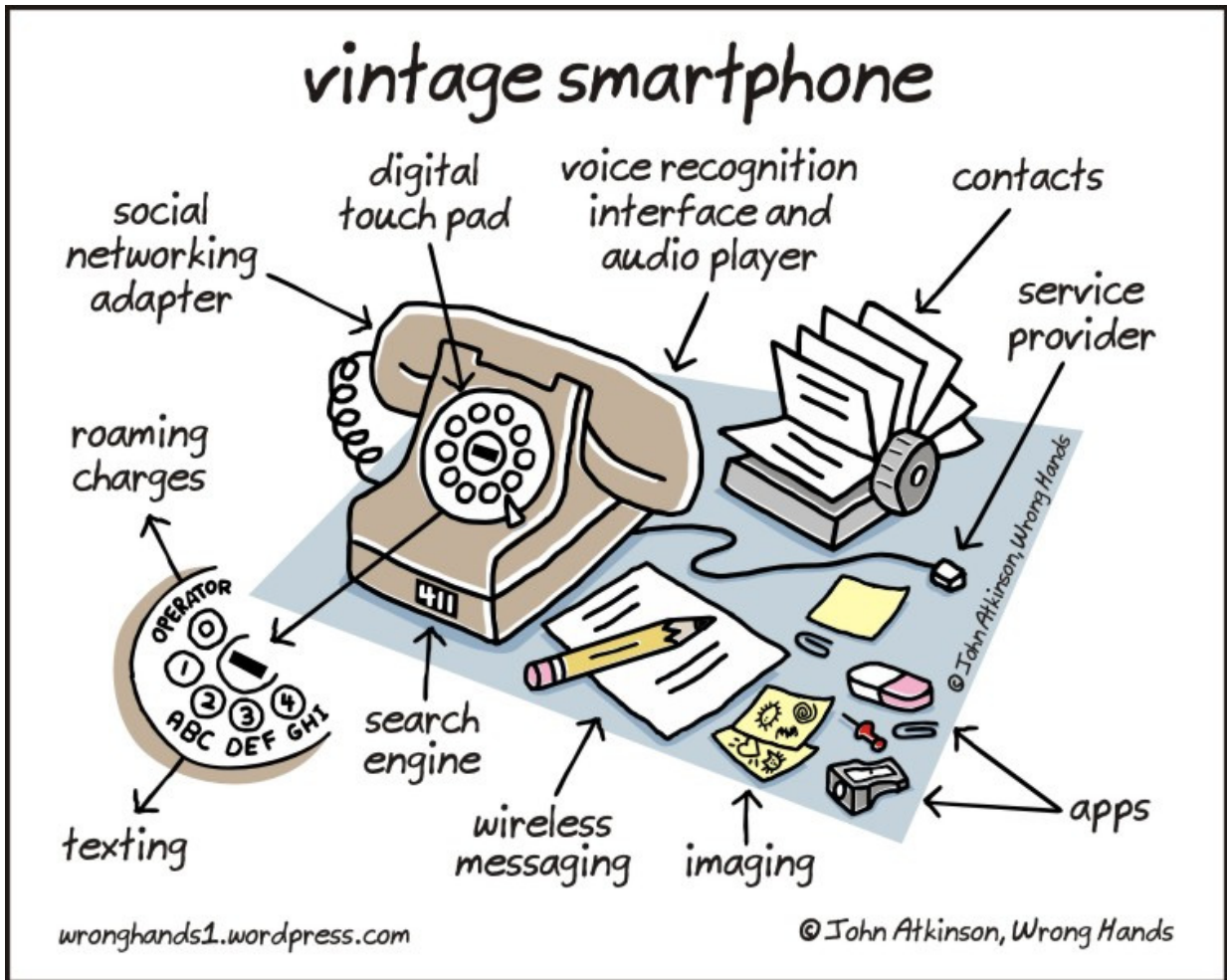
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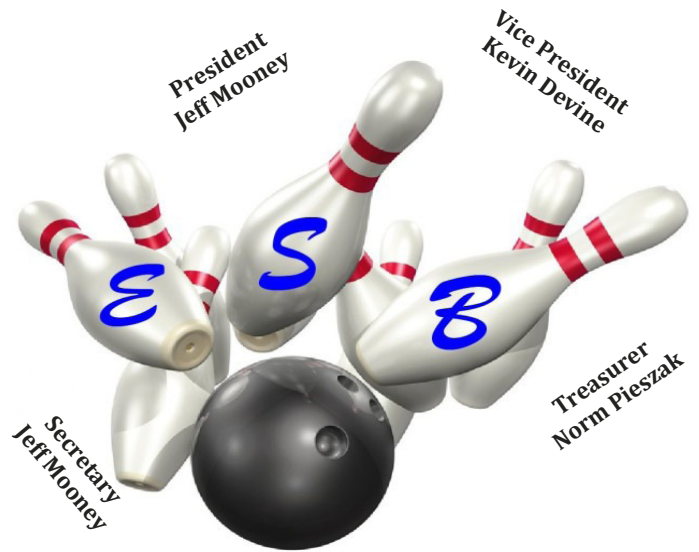
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Application

Date: _____

I hereby make application to the Engineering Society of Buffalo, Inc. and I agree to abide by the Constitution and By-Laws governing this Society.

Name: _____

Street Address: _____

City: _____ Zip: _____

Residence Phone: _____

Where Employed: _____

Firm Address: _____

City: _____ Zip: _____

State: _____ Phone: _____

Fax: _____

Email: _____

Position in Firm: _____

Nature of Business: _____

Send mail to: _____

Residence Business

Signature of Applicant _____

Sponsored by _____

Biography

The Engineering Society of Buffalo contemplates publishing biographical sketches of members in the monthly newsletter "The Western New York Engineer". For this purpose we would like the following information:

Date of Birth: _____ Married Y N

Member of what other clubs/societies: _____

Education: _____

In what engineering field(s) are you interested in? _____

Resume attached? Yes No

Sports & Hobbies: _____

Name of Spouse and Children: _____

Spouse: _____

Children: _____

Name as it should appear on ESB Membership Card: _____

Activities

- Activities in which you would like to participate
- Advertising
 - Scholarship
 - Bowling League
 - Newsletter/Roster
 - Golf Outing
 - Education
 - Program Committee
 - Scholarship Run
 - Business & Community Affairs



Elected by the Board of Directors

_____ Month _____ Day _____ Year

Amount Received:

Initiation Fee \$15.00
 Dues \$ _____
 Total \$ _____

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

UB Students & International Virtual Programming Competition

By Jane Stoye

The results are in from this year's IEEEExtreme 8.0 computing challenge, an annual 24-hour international programming competition.

Team BoogieWoogieHouse, one of three from UB to compete in the event, placed third in Region 1 which included the University of Vermont, Clarkson University, and Syracuse University. They ranked 14th among teams from throughout the US and 147th overall in the competition. Over 1,700 teams from around the world participated in the virtual event.

"Our members ended up doing extremely well," said Mack Ward, President of the IEEE student chapter here at UB. "We are especially proud of our BoogieWoogieHouse team members Tomasz Pietruszka, Scott Will, and James Mazur for their impressive finish. Great job guys!" The reward? In addition to bragging rights, all team members received a digital certificate and a t-shirt.

"I am excited that we had three teams compete this year," said IEEE club advisor Jennifer Zirnheld, an assistant professor in UB's Department of Electrical Engineering. "The contest is a lot of fun, and gives our students the opportunity to face real-world problems that they might not see during college coursework."

IEEEExtreme is a global online challenge in which teams of IEEE student members, supported by an IEEE student branch, and advised and proctored by an IEEE member, compete in a 24-hour time span against each other to solve a set of programming problems. Problems can only be answered in the supported languages, which are C, C++, C#, Java, Python, Ruby, Perl, and PHP. All the members of a team have to be either student members or graduate student members of the IEEE. More information about the competition, which took place October 18, 2014 is available from the IEEE website.

Best wishes for a happy, healthy, and prosperous new year from everyone at The Engineering Society of Buffalo!

Continued from page 5

Prioritize your bullets: When ordering your bullet points, always think, "If the recruiter only had time to read my first or perhaps second bullet, what would I want him or her to read?" Most students think that they have to list their bullet points based on what they did the most. If 75% of their job involved cold-calling prospective clients, they will want to list that first. However, if they worked on a project that was presented to the CEO of the company, then by all means, that should come first!

Categorize your experience section: Because work experience needs to be presented in reverse chronological order, many students are faced with the problem of having to put their current job first, which is often a part-time job unrelated to what they want to do, while they did a terrific internship last summer and want to showcase that. What to do? Simply break your experience section in two: Relevant experience and other experience.

Target your resume: Many students will have a master resume from which they create more specific, targeted resumes for the different industries they want to work in. If a student is simultaneously pursuing internships in marketing and finance,


he will have a marketing resume that has his marketing-related team projects, which uses lots of marketing keywords, while his finance resume will do just the opposite. Tip: Look at the job description for key words to incorporate into your resume.

What to include on your resume: In addition to your education, include work experience, both relevant and not, volunteer experience, college activities/clubs/organizations, leadership roles, team projects, skills, and interests. Interests are great conversation starters in an interview. Often, students will tell me they made a connection with their interviewer by talking about a mutual interest. In short, your resume should provide a picture of a student who is well rounded. A word about GPA: the standard rule of thumb is to put it on your resume if it is greater than 3.0.

Deborah Federico is an Assistant Director of Undergraduate Career Services in the School of Management at Boston University. Prior to her career in higher education, Deborah worked in the corporate world, primarily doing marketing and market research. She blogs about career advice. This article appeared at <http://www.vault.com/blog/resumes-cover-letters/the-college-students-guide-to-a-winning-resume/> and is reprinted with permission.



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