

NEWS

News Blurbs Now! (NBN)

Volland Electric Equipment Corp of Buffalo has hired **Corey Abdulla** as Inside Sales Representative. Volland Electric is New York's largest rotating electrical apparatus repair and distribution company. Being ISO 9002 certified, Volland Electric prides itself on offering their customers the highest quality products and services the industry has to offer.

Picone has promoted **Lynsee Osadchuk** from project accountant to office manager and human resource director after being with Picone for three years. And **Kristin Calarco** has joined their team after receiving a BS in accounting from SUNY Fredonia.



Lynsee Osadchuk
Kristin Calarco



Picone Construction Corp has completed a science wing addition. Teachers and students have begun to move into these state-of-the-art classrooms. A ribbon cutting ceremony was held on January 20 at Pioneer High School, 12125 County Line Rd, Yorkshire NY. Gordon W. Jones Associates is the architect. This addition is part of Pioneer Central School District's \$31 million capital improvement project.

Picone also completed renovations and an expansion to a Technology Center which included approximately 29,400 square feet of building space in Williamsville, NY. Demolition was needed for the entire interior space and an existing generator was removed for the installation of a new generator. Environetics out of New York City was the architect.

Think it's been cold out? Seven **snowy owls** from the arctic have thought so too. They have temporarily migrated to New York City to enjoy the cold.

RJR Engineering's **Tom Gilmartin** will be presenting "Introduction to Automation" on February 23 at Northeast Controls in Amherst. During his 1.5 hour talk, Tom will explain the basics of automation including reading P&ID's, ISA symbols, PLC and SCADA fundamentals. This presentation is hosted by the International Society of Automation -Niagara Frontier Section.



William Davis

The National Commission for the Certification of Crane Operators

(NCCCO) marks their twentieth anniversary in 2015. NCCCO was established in January 1995 as an independent, non-profit personnel certification dedicated to improving the safety of lifting operations. A series of activities and announcements are being prepared to mark this milestone. You can get more information at www.nccco.org/20Years. NCCCO has elected two new Commissioners (William Davis and Brian Haight) and reelected three (Tim Arkilander, Beth O'Quinn, and Douglas Stegeman) to its Commission.

CV3 Architectural PC is always on the lookout for products that are unique and positively effect the triple bottom line. See which product is featured this month at <http://cv3arch.com/category/simplesustainable/> (the solar shingle.)

STEM is important to the US economy. According to the US Department of Education, STEM jobs will increase 14% from 2010 to 2020. Did you know that over three million of those jobs won't be filled because there aren't enough students who pursue a STEM career? Bill Nye, The Science Guy spoke at the Toshiba/NSTA ExploraVision Gala. Is there a place you could speak or a student you could reach with a positive engineering (science, technology, math) message?

Spring **UC Davis Extension Engineering Courses** begin in April. CAD for 3D Printing and Rapid Prototyping, Introduction to Materials Engineering, Joining of Advanced Engineering Materials, Additive Manufacturing with Metals are offered for between \$800 and \$1500.

A photo of the **Tappan Zee Bridge** in New York City has been used on the cover of the Obama budget. This is the first time that a photo has been used for the cover and it is of a bridge that is located in NY!

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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EDITOR'S MESSAGE



**Go and
share your
profession...
it's a great
thing!**

By the time you read this newsletter, I will have already volunteered for two days at the Buffalo Museum of Science to run an engineering activity during their engineer week focus. The museum decided to run activities the week before the official, national Engineer's Week event because children were off from school. Seems like a very good idea and this engineer is wondering why the national event doesn't coincide with the school calendar!

In any event, the first day that I spent at the museum was very busy. Well over 60 children learned about the materials used to build skyscrapers, houses, and airplanes. They learned the difference between shear, tensile, and bending strength. They learned about composite (sandwich board, wood laminate, and concrete) materials too. Then, they proceeded through multiple bridge/ beam experiments where they learned how to make their bridge stronger. Thicker or wider bridges or those with fixed supports all support more weight, of course.

I wish that someone would have shown me exactly what an engineer does when I was a child. You see, my father was a certified public accountant. He was good at math and so was I. I enjoyed solving word problems and used to do logic puzzles etc in my spare time. (Now, I edit newsletters. ;) But when a high school guidance counselor told me that I should become an

engineer, I had no idea what he was talking about!

Maybe this is the reason that I spend so much time showing children the cool parts of being an engineer. Maybe it's because I know that after obtaining a bachelor's degree in engineering, one can obtain a good job in the Buffalo area that will actually allow repayment of student loans along with paying for living expenses.

Each and every one of us has something to share with those around us. I encourage you to find a child to share your engineering knowledge with. And if kids aren't your thing, find a mentor or mentee to interact with. Even letting your friends know what you do each day will help out our profession. Go and share...it's a great thing!

Find a way to speak about your job that is exciting. Yes, there are boring parts of every career but don't focus on those. What is in this for you? Well, I can almost guarantee that you will receive more than you give away.

If you are ever looking for a volunteer opportunity, please contact me. I'm always working on something or another.

Robin M Closs SE PE
ESB Secretary
clossr@yahoo.com

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CALENDAR OF EVENTS

02-26-15	1pm	Rybarczyk Memorial Model Bridge Contest (7-12 grade)	
02-27 to 03-01		Cavalcade of Cars	Hamburg
03-09-15	6pm	Ways and Means Meeting	To Be Determined
03-09-15	7pm	Directors Meeting	To Be Determined
03-16-15		GM Powertrain Plant Tour by ISA	Tonawanda
04-13-15	6pm	Ways and Means Meeting	To Be Determined
04-13-15	7pm	Directors Meeting	To Be Determined
04-21-15		ISA Tech Expo	Marriott Inn, Amherst
12-3 to 12-5		Construct Canada	Toronto



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.



Split Window Fuel Injected Coupe



See ESB member Gene Colucci's vehicle at the Cavalcade of Cars at the Hamburg Event Center. Don't worry, this is an indoor event with free parking. Admission is \$12 and the event takes place on the following dates:

02-27-15	5pm to 10pm
02-28-15	10am to 10pm
03-01-15	10am to 6pm

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TECH ARTICLE

Navy Tests Unmanned Underwater Vehicle

By Edward Gutierrez III

The U.S. Navy completed tests on the GhostSwimmer unmanned underwater vehicle at Joint Expeditionary Base Little Creek-Fort Story (JEBLC-FS) on December 11. GhostSwimmer is the latest in a series of science-fiction-turned-reality projects developed by the chief of naval operations' Rapid Innovation Cell (CRIC) project, Silent NEMO. Silent NEMO is an experiment that explores the possible uses for biomimetic, unmanned underwater vehicles in the fleet.

Over the past several weeks, Boston Engineering's tuna-sized device has been gathering data at JEBLC-FS on tides, varied currents, wakes, and weather conditions for the development of future tasks. "GhostSwimmer will allow the Navy to have success during more types of missions while keeping divers and Sailors safe," said Michael Rufo, director of Boston Engineering's Advanced Systems Group.

The GhostSwimmer was developed to resemble the shape and mimic the swimming style of a large fish. At a length of approximately five feet and a weight of nearly 100 pounds, the GhostSwimmer vehicle can operate in water depths ranging from 10 inches to 300 feet. "It swims just like a fish does by oscillating its tail fin back and forth," said Rufo. "The unit is a combination of unmanned systems engineering and unique propulsion and control capabilities." Its bio-mimicry provides additional security during low visibility intelligence, surveillance, and reconnaissance missions and friendly hull inspections, while quieter than propeller driven craft of the same size, according to Navy Warfare Development Command (NWDC).

The robot is capable of operating autonomously for extended periods of time due to its long-lasting battery but it can also be controlled via laptop with a 500-foot tether. The tether is long enough to transmit information while inspecting a ship's hull, for example, but if operating independently (without a tether) the robot will have to periodically be brought to the surface to download its data.

"This project and others that we are working on at the CRIC are important because we are harnessing the brainpower and talents of junior Sailors," said Captain Jim Loper, department head for Concepts and Innovation, NWDC. "The opportunity for a young Sailor who has a good idea to get that idea heard, and to get it turned into action, is greater [now] than any other time in our Navy's history."

The CRIC was established in 2012 to provide junior leaders with an opportunity to identify and rapidly field emerging technologies that address the Navy's most pressing challenges and aims to find ways to quickly employ them in the fleet. "Our mantra is 'you have permission to be creative.' We want our people to go out there and dream big dreams and put them into action," said Loper. "We want to see projects like this replicated throughout the fleet. The fusion of the deckplate brainpower with support of the most senior leadership in the Navy is going to keep us moving forward throughout the 21st century."

The author is Mass Communication Specialist 3rd Class Edward Gutierrez III from Navy Public Affairs Support Element East. For more information on the CRIC, visit www.facebook.com/NavyCRIC. This press release was published at http://www.navy.mil/submit/display.asp?story_id=84845.

FEBRUARY BIRTHDAYS

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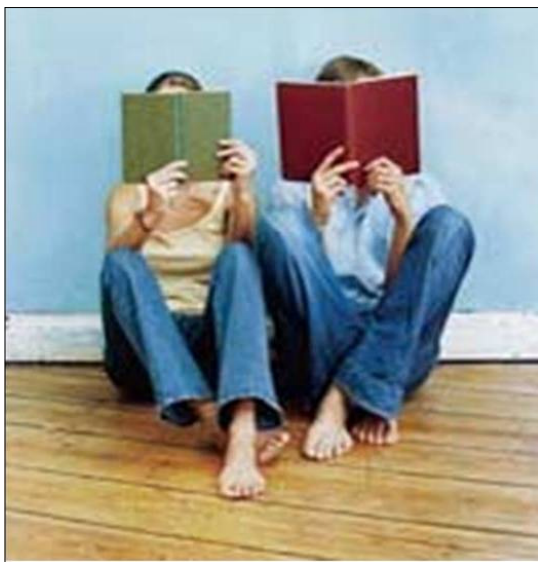
STUDENT INFO

Improve Your Reading Retention

By Tara Pfarner

Some people are readily able to cite facts and statistics in conversation with ease. Others struggle to remember more than a single fact from the text they have just read. How can you improve the amount of information you retain when you study or read? There are several things you can try:

1. Repetition - The more you repeat, the more you remember. Read a passage multiple times. Put it down for awhile then go back and reread it again. Read it aloud.
2. Take notes - Highlight; write down key words, phrases, and quotes; stop after each chapter and summarize its key points in writing.
3. Summarize - In writing, in your mind, or out loud, constantly summarize what you've read into your own words. Write a book review, a blog, a speech (even if you don't intend to deliver it), or discuss the subject with others.
4. Pre-Game - Before reading the book, read reviews or summaries. These will give you an idea of what you're diving into and give you key concepts or points to watch for as you read.
5. Read With The Intent to Teach - If you read as if you intend to teach the material, you will be surprised at the different way you absorb it. Take it a step further and outline a faux lesson plan as you read. This will reinforce the material.
6. Visualize - Slow down and visualize the words. This may mean formulating a scene in your head, creating a mental list, or attaching mental images to the words to make them more real. This will help it stick.
7. Don't Skip the Table of Contents - Reading it will prepare you for what you're about to take in and give you key concepts to look for as you read.
8. Pick the Best Time of Day - Some people work best in the mornings, some at night. Know what works best for you and use it to your benefit.
9. Do It The Old-Fashioned Way - A good old-fashioned book works better than a screen for some people.
10. Associate - Associate new facts with those you already know.



If a method doesn't work for you, skip it and try another. When you find what works, use it! You'll be a better student and a more effective reader when you find the right methods for your learning style.

Tara Pfarner is an Administrative Assistant at RJR Engineering, P.C. in Springville. She can be contacted at tara@rjrpc.com.

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.

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Univ Of California Irvine Chemists Find A Way To Unboil Eggs

By Janet Wilson

Chemists have figured out how to unboil egg whites – an innovation that could dramatically reduce costs for cancer treatments, food production and other segments of the \$160 billion global biotechnology industry, according to findings published in the journal ChemBioChem. “Yes, we have invented a way to unboil a hen egg,” said Gregory Weiss, UCI professor of chemistry and molecular biology & biochemistry. “In our paper, we describe a device for pulling apart tangled proteins and allowing them to refold. We start with egg whites boiled for 20 minutes at 90 degrees Celsius and return a key protein in the egg to working order.”

Like many researchers, he has struggled to efficiently produce or recycle valuable molecular proteins that have a wide range of applications but which frequently “misfold” into structurally incorrect shapes when they are formed, rendering them useless. “It’s not so much that we’re interested in processing the eggs; that’s just demonstrating how powerful this process is,” Weiss said. “The real problem is there are lots of cases of gummy proteins that you spend way too much time scraping off your test tubes and you want some means of recovering that material.” But older methods are expensive and time-consuming: The equivalent of dialysis at the molecular level must be done for about four days. “The new process takes minutes,” Weiss noted. “It speeds things up by a factor of thousands.”

To re-create a clear protein known as lysozyme once an egg has been boiled, he and his colleagues add a urea substance that chews away at the whites, liquefying the solid material. That’s half the process; at the molecular level, protein bits are still balled up into unusable masses. The scientists then employ a vortex fluid device, a high-powered machine

designed by Professor Colin Raston’s laboratory at South Australia’s Flinders University. Shear stress within thin, microfluidic films is applied to those tiny pieces, forcing them back into untangled, proper form.

“This method ... could transform industrial and research production of proteins,” the researchers write in ChemBioChem. For example, pharmaceutical companies currently create cancer antibodies in expensive hamster ovary cells that do not often misfold proteins. The ability to quickly and cheaply re-form common proteins from yeast or E. coli bacteria could potentially streamline protein manufacturing and make cancer treatments more affordable. Industrial cheese makers, farmers, and others who use recombinant proteins could also achieve more bang for their buck.

UCI has filed for a patent on the work, and its Office of Technology Alliances is working with interested commercial partners.

Besides Weiss and Raston, the paper’s authors are Tom Yuan, Joshua Smith, Stephan Kudlacek, Mariam Iftikhar, Tivoli Olsen, William Brown, Kaitlin Pugliese and Sameeran Kunche of UCI, as well as Callum Ormonde of the University of Western Australia. The research was supported by the National Institute of General Medical Sciences (grant R01 GM100700-01) and the Australian Research Council (grants DP1092810 and DP130100066).

This press release appears on the University of California, Irvine website at <http://news.uci.edu/press-releases/uci-fellow-chemists-find-a-way-to-unboil-eggs/> and is reprinted with permission.




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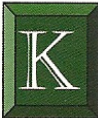
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Engineers Develop World's Longest 'Flat Pack' Arch Bridge

Civil Engineers at Queen's University Belfast in collaboration with pre-cast concrete specialists Macrete Ireland have developed the world's longest 'flat pack' arch bridge. Based on the 'FlexiArch' system, the bridge is unique because it will be transported to site in flat-pack form but when lifted, will transform under gravity into an arch.

The bridge is due to be installed near Portsmouth and will span 53 feet over the Wallington River in Waterlooville, Hampshire. Made up of 17 units (1m wide) of precast concrete each weighing 16 tons, the bridge will take less than a day to install using a 200-300 ton crane in association with a lifting beam also designed and built in Northern Ireland.

If the alternative of a conventional arch had been utilized it would have taken months to construct and would have been much more costly. A FlexiArch bridge is the result of ten years of research from the early 1990s in the School of Civil Engineering at Queen's University Belfast. Queen's was recently placed in the top ten of research intensive universities in the UK and Civil and Construction Engineering at Queen's was ranked third in the UK for research intensity.

Professor Adrian Long, from the School of Planning, Architecture and Civil Engineering at Queen's University, who patented the FlexiArch concept in 2004, said: "This is a real milestone which has been reached as a result of the hard work, effective collaboration, and

the combined expertise of the Queen's and Macrete team. We are delighted with this latest development and of how successful the FlexiArch system has become. Over 50 FlexiArch bridges have now been installed in the UK and Ireland where it has been found to be even more versatile than anticipated.

"The award-winning FlexiArch system is attracting international interest and this project is a reflection of the world leading research being undertaken at Queen's and the effectiveness of our collaborations with industry and business."

Macrete project manager, Abhey Gupta said: "This innovative system is exceptional as it is easily transported in flat pack form and then rapidly installed on site. It is also unique as its strength does not depend on corrodible reinforcement, thus it should have a lifetime of at least 300 years whereas conventional bridges seldom achieve their design life of 120 years." The FlexiArch system has seen continuous investment by Macrete since they were granted exclusive licensing rights for the UK/Ireland in 2006. This plus the additional investment by Invest Northern Ireland has allowed Macrete to provide 70 person years of employment at the company's headquarters in Toomebridge.

Images and information can be found on the Macrete website at <http://www.macrete.com/flexiarch/flexiarch-projects> and video of a FlexiArch bridge being installed can be viewed at <https://www.youtube.com/watch?v=pQbBxY3BmSI>. For further information, email Professor Long at a.long@qub.ac.uk. This press release appears on the Queen's University website at <http://www.qub.ac.uk/home/ceao/News/Title,486973,en.html> and is reprinted with permission.



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Resurgence Brewery Networking Event Recap

By Matthew Plizga

The Engineering Society of Buffalo had a fantastic inaugural networking event on January 8th, 2015. The event was a smashing success given it was unprecedented! Approximately 50 people attended in spite of an impending snow storm and frigid cold temperatures (15° F). Even Brad Bassano (President 2011-2012), who doesn't even drink beer was there.

Those in attendance were a varied group of professional business men and woman. Many of the attendees were business owners, influential pillars of their company, and "movers and shakers" of Buffalo. One of the most exciting things about the event is that more than half of attendees were not ESB members. The atmosphere was relaxed and fun.

Resurgence Brewery was a terrific host for ESB. Brandon Woodcock from the brewery was our point person and was very helpful setting our event up. They provided us with the use of the space for our event for no charge. The event was also successful for ESB in that we profited a small amount of approximately \$425 from our sponsors who have been very generous to ESB in the past. We would like to thank the sponsors once again:

- Eberl Iron Works
- EGW Associates Inc
- SJB/EmpireGeo
- Dwight Moldenhauer Inc
- Earth Dimensions Inc

On top of being a low cost event for those in attendance (\$6/ person), our sponsors also brought free gifts for the

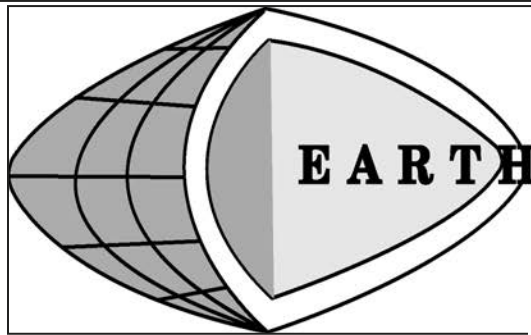


attendees. Free pens, koozies, and other promotional material were handed out. The Society gave away raffle tickets for every drink purchased. The raffle tickets were used for the chance to win a \$25 Amazon gift card, which Marcus Epps won! Also, the sign-in sheet of the attendees was later distributed for further networking possibilities. Some of the businesses present were:

- Accent Stripe Inc
- Avox Systems
- Buffalo's Ultimate Fitness Facility
- Commercial Real-estate
- Eberl Iron Works, Inc
- Earth Dimensions
- EGW Associates
- Five Star Bank
- Imagine Staffing
- ISC
- JF Automation USA
- Mass Mutual Buffalo
- McMahon and Mann Engineers
- Merrill Lynch
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- PCA Technology Group
- PCB Piezotronics
- Precious Plate
- Servpro of the South Towns
- Simmers Crane



For more information on our next networking event, contact Matthew J. Plizga, P.E. (ESB Board Member and Past President 2013-2014) at mplizga811@aol.com



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MEETING MINUTES

Attendees: Officers: Closs, SanFilippo, Samol, Scofidio
Board Members: Bandriwsky, Mooney, Plizga
Members:
Call to Order: President Marco Scofidio called the meeting to order at 6:24pm
Minutes: The minutes of the November meeting were read aloud and approved

Committee Reports

Advertising: Ron Papaj and Mike Samol spoke and will try to contact previous advertisers.
Audit: Steve SanFilippo, Robin Closs and Marco Scofidio meet January 26 5-7pm at An-Cor.
Bowling: Brian Klementowski almost got a third 300. December Whiskey Shoot gave out 32 turkeys. Had 100% participation on New Year's Day bowling. St Pat's day shoot will be on 3-11-15.
Bylaws: No report
Education: PE course begins on 1-15-15 with four participants.
Endowment: Doing well. Don could give list of funds at future meeting.
Entertainment: Networking event was very successful. Would like to repeat in summer possibly at Flying Bison, 716, etc. Will also do tour/social event at Wendt test facility in March possibly. Another tour possibility is Tri-Main.
Fundraising: Approximately \$400 profit on networking event.
Golf: No report
Historian: No report
Media: Mike Samol trained on website. Will have a couple more sessions in future.
Newsletter: No report
Nominating: Ron Papaj will be looking to fill director seat.
Scholarship: No report
Scholarship Run: No report
Sunshine: Sending get better wishes to Ron Papaj.
Youth membership: No report

Adjournment: The meeting adjourned at 6:59pm
Next Meeting: Monday February 9, 2015 Wendt Corporation 2555 Walden Ave, Buffalo NY

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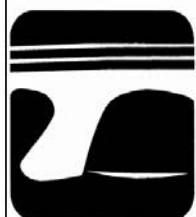
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Training The Next Generation Of Power Engineers

By Matt Wheeler

A new generation of power engineers is needed to build and operate a "smart grid" that incorporates renewable energy sources, advances in control systems, communications, signal processing, and cybersecurity. The College of Engineering & Computer Science at Syracuse University has taken up the charge to educate and prepare the smart grid workforce for the future. When it comes to educating students about complex subjects like this, it's not just what you teach, but how you teach it. That's why Professors Tomislav Bujanovic and Prasanta Ghosh of the college's electrical engineering and computer science department have made the pedagogy of their power engineering track a priority. The college offers modernized power courses and new smart grid courses to graduate and undergraduate students. It also hosts a smart grid lab that provides hands-on experience. The courses and the lab were developed using grants from the Department of Energy.

In a recent paper presented at the Conference of the American Society for Engineering Education, Bujanovic and Ghosh provide examples of the hands-on experiments electrical engineering students are conducting as part of their undergraduate coursework. Students apply the theoretical concepts they have learned in the classroom to control a machine's torque, speed, and position using a digital controller designed in Matlab Simulink and dSpace real-time interface hardware. Students demonstrate what they have learned from the hands-on experiments by analyzing their observations and writing a professional report in which they are required to communicate technical material effectively.

By integrating the concepts learned in the classroom with hands-on experiments, students gain a more thorough understanding of the topic. Introducing real-world application of engineering concepts at the undergraduate level and providing them access to a world-class smart grid lab

sets this program apart from electrical engineering courses at other institutions. Beyond learning the science of power engineering, students also learn to work as a team to complete their experiments. Bujanovic describes how this skill will be vital to those in the smart grid workforce: "The complexity of the smart grid necessitates the expertise of many people of many different disciplines," he says. "It is not possible for one person to be an expert in everything. This means that strong teamwork skills are absolutely essential to a successful career working in contemporary power engineering and on the smart grid."

Finally, a key element of the pedagogy is an emphasis on the importance of open-minded, lifelong learning. Students are provided with the knowledge and skills to launch their careers in today's world. They must also understand that their continued success in the field of engineering hinges on their ability to learn new concepts and new technologies. The state of the art in any given field is constantly in flux, so a successful engineer must master the ability to remain curious and learn continuously to remain relevant.

At first blush, learning the skills that will keep our lights on and upgrade the grid can seem daunting, but with the College of Engineering and Computer Science's approach, students gain a firm grasp of the subject matter and many become passionate. An overwhelming majority of electrical engineering students at Syracuse University find this track attractive. Ninety-five percent of graduating electrical engineering students have taken advantage of the power engineering track in the past year.

For additional details on Bujanovic and Ghosh's pedagogy, check out their paper, "Laboratory Experiments for Enhanced Learning of Electromechanical Devices," at <http://eng-cs.syr.edu/college-news/training-the-next-generation-of-power-engineers/#sthash.j8TbEyVL.dpuf>.



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Building Efficiency At Catholic Health

By James Cavanaugh

As Catholic Health came together and grew in WNY over the last 16 years, its administrative team was spread out across the county in eight different locations. This caused numerous inefficiencies, barriers to collaboration among associates, and redundant overhead costs for the system. When Catholic Health looked to bring all their administrative services under one roof, they reached out to Uniland Development and Stieglitz Snyder Architects to design and develop their new corporate headquarters. Once the site was selected in the heart of downtown Buffalo, Stieglitz Snyder worked closely with Catholic Health in designing a modern workspace for their administrative teams as well as a multi-purpose training center.

Cutting edge information and communication technology keep associates connected and informed. The building also features state-of-the-art training facilities including medical simulation labs. Flexible work spaces and informal conference areas foster collaboration among associates.

Creating a healthy environment inside and out was also key to the design process. Large windows and glass interior walls provide abundant natural light throughout the building. The cafeteria features healthy food options and comfortable indoor and outdoor eating areas. A large gym, overlooking downtown Buffalo, is available for all associates. The building's central location encourages



associates to walk to many downtown restaurants, shops, and entertainment venues.

The spiritual component of Catholic Health's mission is embodied by the dramatic chapel in the main lobby of the building. The chapel features a dramatic, two-story tall tile mosaic. The intricate mosaic was carefully dismantled and moved from the former Nazareth Nursing Home in Buffalo to be reassembled in the new building.

More of the images created for Catholic Health and Stieglitz Snyder Architects can be seen on the back cover of this newsletter and at http://www.cavphoto.com/Gallery/Featured%20Project/CHS_Admin/index.htm.

James Cavanaugh is an architectural and aerial photographer. He is also a licensed pilot and enjoys flying his own airplane and spending time in helicopters. Email him at cavphoto@roadrunner.com as he would be interested in taking your marketing material to the next level by providing quality images of your next project!



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Once people were comfortable riding the up escalator, it took another 30 years for them to be comfortable riding the down escalator.

Vertical Transit

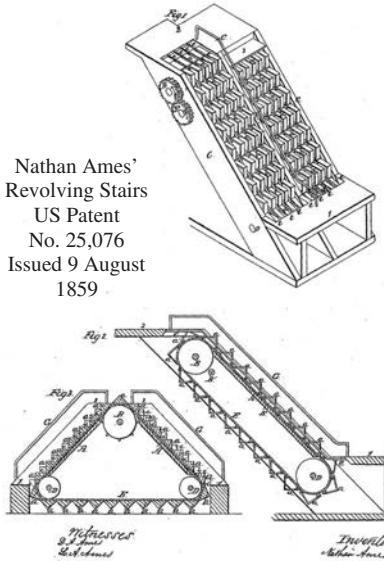
By Jeff Scott Taylor

Within two weeks, 75,000 thrillseekers had sat down on the popular 1896 ride at Coney Island. Standing was deemed too risky.

We often take for granted the luxuries that inventions and inventors have afforded us throughout history and through the years. One example can be found in shopping malls, universities, airports, government buildings, mass transit locations and, well, anywhere a lot of people need to go from one place to another with little or no effort...escalators.

In 1859, Nathan Ames of Saugus, Massachusetts invented something he called the Revolving Stairs. The Revolving Stairs are officially acknowledged as the world's first escalator design. Sadly, Ames died shortly after filing his patent and was never able to build a working model. There are very few comparisons to be made between the Ames design and the escalators of today anyway. His original design required passengers to jump on at the base of the stairs and then to jump off at the end. His idea was to eventually refine and perfect a mechanical staircase for household use, focusing on health and mobility issues in private homes as opposed to public use.

Nathan Ames' Revolving Stairs
US Patent No. 25,076
Issued 9 August 1859



There were many patents filed and lots of ideas during the early days of vertical transit. Safety issues and practicality issues plagued designers for quite a while. One of the early hand rail systems required a lubricating oil that would often cover and stain the hands of the people that used

them. Some just about ejected the passengers at the end and proved to be very unsafe. Some designs had the steps or stairs made out of wood.

Others were little more than an inclined belt with cast-iron slats or cleats attached to it to stand on. One such design is considered to be the first working escalator ever produced. It was called by its inventor, Jesse Wilford Reno, the "inclined elevator". One was located alongside the Old Iron Pier at Coney Island theme park in New York City in 1896. Another was built beside the Brooklyn Bridge in Manhattan and another in the Boston subway system.

It was obvious that the moving stair designs were gaining notoriety and public interest. Eventually a few inventors and patent holders merged and worked with an innovative manufacturer called the Otis Elevator Company. When they began expanding on and perfecting the early designs, we saw something like the escalators we use today. The first commercial escalator was manufactured in the Otis factory in Yonkers NY in 1899. It was wooden and in 1900, it won first place prize at the Paris Exposition Universelle in France. It wasn't until the 1920's though that Otis incorporated the cleated, level steps we see on escalators everywhere now. Otis went on to dominate the escalator business as its leading manufacturer.

Jeff Scott Taylor is a construction worker that also has a head on his shoulders. He enjoys researching, learning, and sharing his knowledge. He is also a great interior painter & would like to write song lyrics professionally. Jeff can be reached at jstjr1225@yahoo.com.



Picture by Roman Milert | Dreamstime Stock Photo

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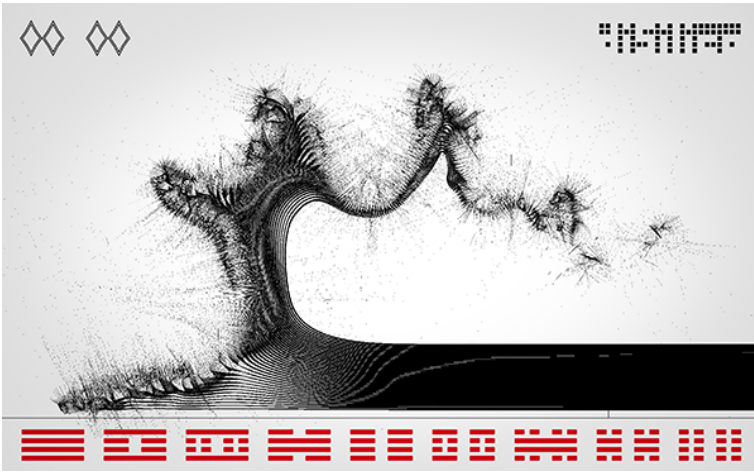
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Mechanical Engineering Research Art Wins Best of Show



To the uninitiated, James Colovos' award-winning research image may look like an abstract illustration of a tidal wave or perhaps a computer-generated beast from a modern-day horror movie. Instead, this bizarre swirl of black-and-white pixelated lines and dots is in fact a scientific representation of what happens when a tungsten plate impacts a porous rock at ten times the speed of sound.

Colovos' image is more than just science - it's also art. This research image was named the Best in Show at this year's Research as Art Contest, a competition of image and videos produced from scientific research. Colovos, a University of Utah mechanical engineering

graduate student, won \$100, a certificate, and "praises from my professor, which is the most important," he says.

Colovos created the simulation of the plate striking the rock - which took just 200 microseconds to occur - during his work on simulation software that models what happens when things, such as explosives, impact soil and rock. It took a cluster of computers at the U's Center for High Performance Computing about a day to create the image. Colovos' research could benefit how explosives are made for oil and gas exploration or it could be used in simulations of landslides and earthquakes to determine how the ground is altered.

"I look at these kinds of simulations all day, and you can take for granted the results that you have in front of you," Colovos says. "When I saw the image, I stopped and made sure I captured it the way I wanted to. I didn't want to forget it as art."

The contest was sponsored by The HSC Cell Imaging Core, Huntsman Cancer Institute and The Leonardo Museum of Salt Lake City.

Article and photo were reprinted with permission from <http://mech.utah.edu/mechanical-engineering-research-art-wins-best-of-show/> and is credited to The University of Utah College of Engineering. The Department of Mechanical Engineering at the University of Utah is committed to providing students with broad-based, rigorous and progressive education. By combining state-of-the-art facilities with renowned faculty, the department provides an education that gives students the necessary skills to become the next generation of innovators.

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Hindsight Is 20/20? Past Quotes...

"Computers in the future may weigh no more than 1.5 tons."
-- Popular Mechanics, forecasting the relentless march of science in 1949



"Heavier-than-air flying machines are impossible."
-- Lord Kelvin, president, Royal Society in 1895

"Drill for oil? You mean drill into the ground to try and find oil? You're crazy." -- Drillers who Edwin L Drake tried to enlist to drill for oil in 1859

"I have traveled the length and breadth of this country and talked with the best people, and I can assure you that data processing is a fad that won't last out the year."
-- The editor in charge of business books for Prentice Hall in 1957

"There is no reason anyone would want a computer in their home." -- Ken Olson, president, chairman and founder of Digital Equipment Corp in 1977

"640K ought to be enough for anybody." -- Bill Gates, 1981



"The concept is interesting and well formed but in order to earn better than a C, the idea must be feasible."
-- A Yale University management professor in response to Fred Smith's paper proposing reliable overnight delivery service. Smith went on to found Federal Express Corp.



"This 'telephone' has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us." -- Western Union internal memo in 1876



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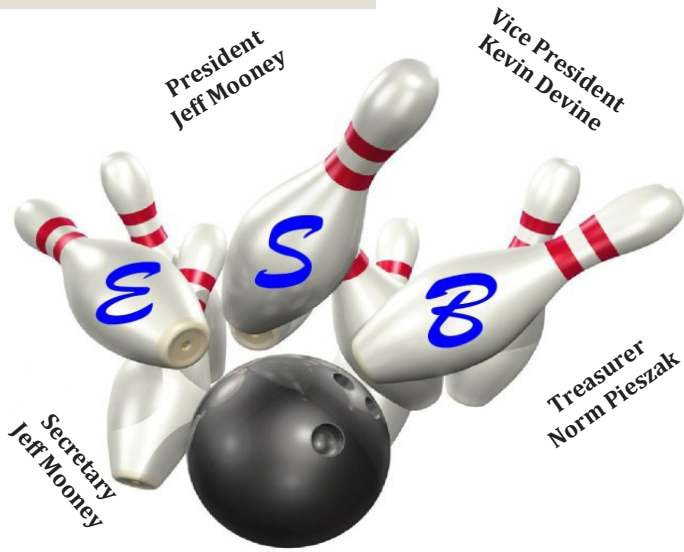
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1.	THE KEGGLERS	121.5	76.5
2.	JUNKYARD DOG'S	117	81
3.	MESSY HOSE	112.5	85.5
4.	AVERAGE JOE'S	111	87
5.	DUMBLEDORES ARMY	108.5	89.5
6.	OUTCASTS	108	90
7.	SABER	105	93
8.	ODIES	102	96
9.	SPLIT HAPPENS	101.5	96.5
10.	CAD/CAMS	98.5	99.5
11.	DEAD LOADS	95	103
12.	AZZ CLOWNS	93	105
13.	K & M TREATS	85.5	112.5
14.	ARCHER IMAGING	84	114
15.	PROTRACTORS	76	122
16.	TRANSMITTERS	65	133

Scratch Game

Denis Fountain	268
Bob Keichner	252
Tom Mann	245
Chris Gabrielli	243
Paul Mosher	237
Alan Cook	235
Julia Hay	224
Hannah Mosher	224

Scratch Series


Denis Fountain	681
Chris Gabrielli	680
Paul Mosher	663
Stan Fularz	643
Tom Mann	638
Jim Finn	636
Hannah Mosher	617
Julia Hay	603

Handicap Series

Scott Sutherland 730

Cross Alley w/Handicap

Tom Fiegl 296




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Nature of Business: _____

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Residence Business

Signature of Applicant _____

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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
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 \$20 Student

'Freshman 15'...How Do You Prevent the 'Freshman \$15,000'? By Sara Saldi

College freshmen nationwide are heading to campus armed with credit cards and ready to rack up debt. They know how to squeeze the trigger on purchases but often they don't have experience in handling the aftermath of debt. And many of them are making financial decisions for the first time. According to a 2009 Nellie Mae (a Sallie Mae student loan company) survey:

- One third of freshmen arrive on campus with at least one credit card
- Many have more than four credit cards
- Eighty four percent of undergraduates will eventually have at least one credit card
- By graduation, students will have an average credit card debt > \$4,100
- Almost 1/5 of graduating seniors will owe > \$7,000 on credit cards

To help students make better decisions, the University at Buffalo launched a financial literacy program managed by a former financial aid administrator. As UB's financial literacy program coordinator, Kellie Kostek's objective is to reach as many students as possible to teach the benefits of fiscal responsibility. "Most students arrive on campus having never had a serious conversation with their parents about managing debt," she says. "They just don't know where to begin."

As the new semester gets underway, Kostek's weeks are filled with financial workshops, special appearances to UB 101 orientation classes and talking to resident assistants - who are often the first to identify the effects of debt crisis in students. Kostek often dedicates entire workshop sessions to the amount of money spent on coffee and fast food items alone, which can add up to more than a thousand dollars a year. She discusses better time management so that coffee can be made in the residence hall and snacks can be made or purchased more cheaply. Kostek stresses using credit cards sparingly, for emergencies only, if possible - not for everyday impulse buys. Kostek's other money management tips for students include:

- Don't carry around your credit cards to cut down on impulse purchases
- Don't shop when you're hungry
- Limit eating out to once a week
- Rent DVDs versus going to the movies

- Start a savings habit, pay your savings account first - every time you get paid
- Volunteer on Campus - free food and a great networking opportunity!
- Pay bills online or set up auto transfers with your bank
- Look into transportation alternatives such as ride sharing, public transportation, and bicycling

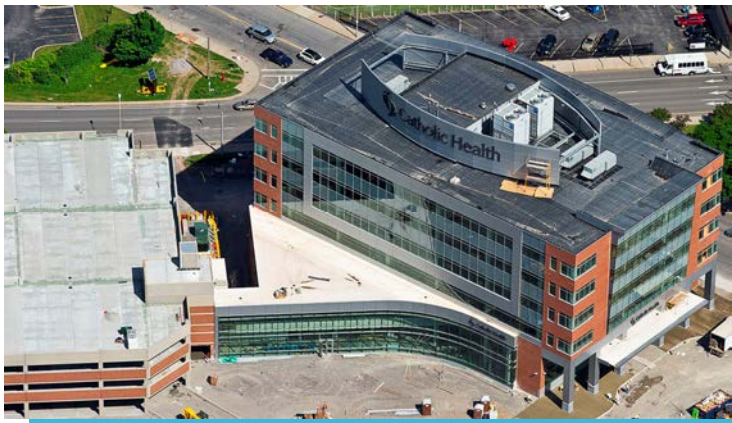
Kostek notes that college students are target for many credit card companies and easily fall prey to direct mail marketing credit card issuers. And because they are unsophisticated in handling a budget, are stressed for time, and many are negotiating the challenges of living on their own for the first time, they're not thinking about the consequences of credit card debt.

UB, like many colleges and universities, prohibits credit card companies from soliciting on campus. Direct mail solicitations for credit cards to students on campus are not prohibited, however. And there is growing concern at UB and other schools about the ways in which all debt affects student retention. Students who rack up enormous amounts of debt before graduation may be forced to drop out of college because they have no means of paying their student account charges (campus cash), Kostek notes. And many students who leave early have large bills and little hope for getting hired (without the degree/credential).

Kostek also points out that future employers are now investigating credit histories and credit scores as part of a background check before hiring. "Even landlords are asking for credit histories before renting apartments. It's a good indicator of how responsible a student is," she says.


Even before arriving on campus, Kostek says there is one important step parents and students should take to prevent debt burden: "Take the time to fill out the Free Application for Federal Student Aid (FAFSA), and take out a less-expensive federal student loan. Not only is the interest less, FAFSA also offers several flexible repayment plans that may be personalized for student needs if they are low income (field or job) or have no income (unemployed, can't find a job)," she says.

The University at Buffalo is a premier research-intensive public university, a flagship institution in the SUNY system, and its largest and most comprehensive campus. UB's more than 28,000 students pursue their academic interests through more than 300 undergraduate, graduate, and professional degree programs. Founded in 1846, the University at Buffalo is a member of the Association of American Universities.



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