

NEWS

News Blurbs Now! (NBN)

ESB thanks Ken Janusz for his generous gift back to the scholarship fund. Ken received a scholarship from ESB in 1966 and has been an engineer for 45 years now. He said that ESB's scholarship "provided much needed funds and also was a 'vote of confidence'... that I had the ability to become an engineer. That got me through several tough semesters in those four years at UB." It's nice to know that ESB's scholarships have helped so many people throughout the years!



The Nintendo corporation was founded in Japan in 1889 but didn't make the iconic Nintendo Entertainment System until 1985. What did they do before the NES? Their only notable product before 1956 was a type of playing cards called hanafuda or "flower cards" which they still make to this day. And between 1956 and 1977, they travelled in many different directions including developing the Love Tester-a novelty toy that would indicate a couple's "strength of love for each other" when the couple held hands and each person held an end of the product. Do you think one of these will sell for as much as those video games that were dug up?

Ever heard of a photo bomb? Ever photobombed? Well, the moon has. Check out the gif at <https://www.washingtonpost.com/blogs/capital-weather-gang/wp/2015/08/05/stunning-gif-shows-moon-crossing-earth-from-new-satellite-1-million-miles-away/> and see how the moon "moves over the earth" when a satellite was taking photos of the earth. It's cool to watch!

India has purchased \$2.5 billion worth of helicopters from Boeing to replace their Soviet-era ones.

Researchers in Finland and Germany are approaching a solution to allow rubber to heal itself. Maybe we won't need to spend as much money on tires in the future!

Picone Construction welcomes Kate Crawford to their team! Picone is continuing renovations on the Kids Escaping Drugs Facility located at 920 Harlem Road in West Seneca where the architect of record is CV3 Architectural.



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



"I am very excited for what lies ahead for all."

Here we are, already one month into the new season. I cannot believe how fast this month has gone. And in just a few short weeks, on October 22nd, is the kickoff event to begin another great year. The Engineering Society of Buffalo (ESB) will host its Past Presidents Dinner, as we pay respect to our past leaders, discuss our present activities, and look toward the future engineer.

This year, the event will be held at The Saturn Club of Buffalo which boasts of the distinction of being a historical landmark (as the original Saturn Club history dates back to 1885) as well as having great architectural value in the new club house.

Our master of ceremony for the event will be one of our own past presidents, Ms Robin M Closs SE PE. We are excited as well as honored to have Robin lead us through the evening's events.

Our program this year includes an internationally recognized speaker. Mr Richard T Cartwright PE CHMM CPIM will present on "Engineering Career and Survival Skill Development."

Richard has an extraordinary background in business development, environmental remediation, and ecological restoration. His presentation is sure to be stimulating and captivating to the entire audience.

We will also formally announce our annual scholarship winners. There are twelve recipients. They each will be introduced at the event and

presented their scholarship awards. ESB gives a great thanks to the scholarship committee for giving of their time and effort to sort through all the applicants: Donald Kossuth, Patrick Conway, Paul Georgeades, and Jeff Salzmann.

ESB is a strong organization and the core of our strength is easily recognized through the diversity of our own engineering disciplines, the dedicated effort from individual members, and the proud history of our organization.

The exciting news on the officers side of the organization is that we have filled our vice-president position with Robin Closs who brings: proven leadership, organizational skills, and commitment to the position. We also filled our secretary position with a newly appointed board member. Robert Kuberka offers ESB a new energy level, as well as an obvious desire to contribute to our great organization.

I think our engineering predecessors would be extremely proud of ESB as it is today. I believe in our efforts to remember our past leaders, the way we lead in honorable fashion, and our connection with the future engineer and our own community; that we surely meet the ethical values and ideals that were originally scripted.

I am very excited for what lies ahead for all.

Michael J Samol
ESB President
msamolacs@gmail.com

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CALENDAR OF EVENTS

10-12-15	6pm	Ways and Means Meeting	562 Genesee St, Buffalo (DNIPRO)
10-12-15	7pm	Directors Meeting	562 Genesee St, Buffalo (DNIPRO)
10-15-15	530pm	Regulatory Update & Cont Ed Guidelines	6492 Main Rd, Stafford (Red Osier Restaurant)
10-15-15		Deadline for newsletter content	
10-17-15	9am	Junk Warriors/Adopt A Highway	Corner of Colvin & Brighton, Tonawanda
10-19-15	550pm	ISA Tour Lockhouse Distillery	41 Columbia St, Buffalo in Cobblestone District
10-22-15	6pm	Past President Dinner	977 Delaware Ave, Buffalo (The Saturn Club)
10-24-15	10am	ABCD, ASCE, NACE, & NYSSPE Football Game/Networking Event at UB Football Stadium	
11-06 to 11-08		Engineers Without Borders Regional Conference	Syracuse



NEXT BIG ESB EVENT

Junk Warriors-Requesting Backup!

Be outdoors!

Contribute to the community!

Improve the environment!

Email ESB1894@gmail.com to let us know that you are interested in helping cleanup our stretch of Colvin Boulevard in Tonawanda. Meet in the Family Video parking lot (Colvin & Brighton) on Oct 17 at 9am.



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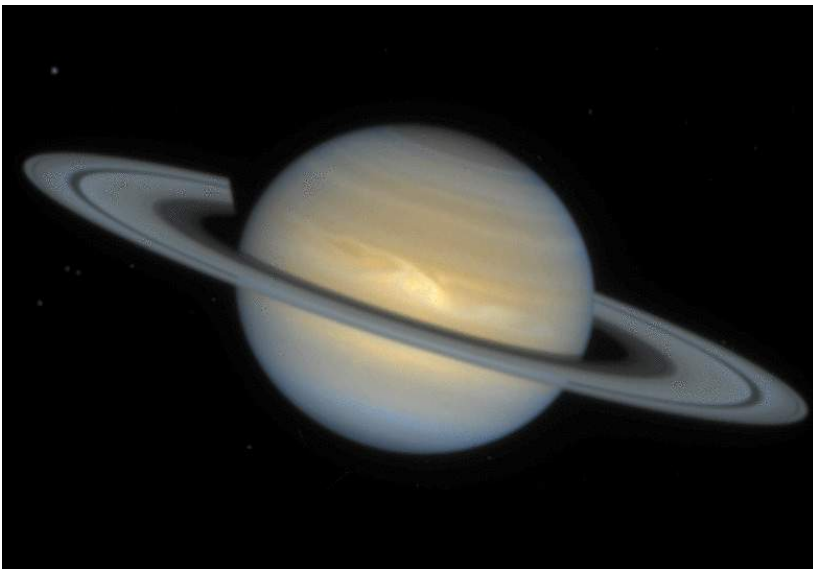
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NEXT NEXT BIG ESB EVENT

ESB Past Presidents Dinner 2015



Picture by NASA/ESA/STSci

The Engineering Society of Buffalo will be hosting its Annual PPD on
Thursday October 22
at
The Saturn Club of Buffalo
977 Delaware Ave
Buffalo, NY 14209

6:00 pm Cocktails - Cash bar
7:00 pm Dinner followed by program/ presentation

\$70 per person

Free to ESB Past Presidents
and Scholarship Recipients.

(No shows will be billed, however.)

Dinner Choices

- Seared Atlantic Salmon - Jasmine rice pilaf, fresh vegetables, dill beurre blanc.
- French Bistro Chicken - Whole grain mustard veloute, forbidden rice, fresh vegetables.
- Slow Roasted Beef Tenderloin - Chanterelle mushroom ragout, fresh vegetables, and veal demi-glace.
- Vegetable Napoleon - Layers of grilled fresh garden vegetables, aged goat cheese, house made tomato sauce and gnocchi.

Send name, address, phone, email address, dinner selection, & payment by Oct 12 to:

ESB
PO Box 1677
Amherst NY 14226

**Richard T Cartwright PE CHMM CPIM
will present on Engineering Career and
Survival Skill Development.**



Mr Cartwright is a business development manager at USA Environmental, which provides cost-effective solutions to difficult environmental remediation, ecological restoration, and radioactive health physics-related problems. He is an internationally-recognized motivational speaker who regularly blogs about hazardous materials and career development topics. He doesn't create hazardous careers nor develop topical materials though. He can be reached at rcartwright@usaenviro.com or 716-550-6436.

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Ed Lutz

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STUDENT INFO

Drawing In The Third Dimension

By Sarah Bates

Imagine you could reach inside your old Batman comic, grab the Caped Crusader by the shoulder, and spin the whole scene around to get a new 3-D view. A new software platform from small business Mental Canvas may soon let you do just that. The technology allows you to draw like you would with pen and paper, except when you put the pen down, the sketch is viewable from multiple directions--like having access to every camera angle. (Watch the video at <https://youtu.be/UQlojC9K7rU> to get a real sense of it.)

"I think of it as a spatial drawing," says Julie Dorsey, computer scientist at Yale and founder of Mental Canvas, a tech startup funded by the National Science Foundation (NSF). "Fundamentally, the technology expands on what we think of as a conventional drawing or sketch." The tool could someday enable scientists to create 3-D versions of their back-of-the-envelope molecular structures. Architecture students can gain new perspectives on their building designs. Filmmakers can find new ways to visualize storyboards.

The technology started as passion project by Dorsey nearly 10 years ago. There is a disconnect, she thought, between sketching in 2-D, which is fast and fluid, and modeling in 3-D, which is slow and requires precise geometry. Dorsey studied architecture as an undergraduate student. She was drawn to computer graphics and graduate work in computer science as a way to expand her interests in designing, rendering and exploring human-made spaces, also known as "built" scenes.

"The built world poses an amazing range of difficult problems: from modeling stone weathering on a Gothic cathedral to simulating lighting effects in a city at night," she said. But while we're surrounded by amazing devices--from smart watches to smart glasses--we're still drawing like it's the Renaissance. "Sketching today isn't that different than what Leonardo [da Vinci] was doing, even with a tablet," Dorsey says. "Today's digital illustration packages merely simulate drawing on paper. They don't accelerate the sketching process or enhance a sketch's value as an ideation or communication tool."

Dorsey began to develop her technology in 2007 with support from a small NSF exploratory research grant. Prior to that, she had explored novel 3-D digital environments for years, with NSF's support. Building the platform meant developing a new media type, as well as a set of tools to design and interact with this media form.

Dorsey's challenge was to find a way to explore complex geometric forms through drawing. Her technology incorporates elements of computer-aided design, 2-D and 3-D graphics, software engineering, and human-computer interaction.

"Most people think IT innovations happen in a garage overnight," says Peter Atherton, NSF program officer who oversees Mental Canvas' Small Business Innovation Research grant. "But it actually most often takes years of hard work and support."

Consumer technologies--even really cool ones--are only successful if consumers actually use them. In 2012, Dorsey participated in the NSF Innovation Corps program, which trains scientists and engineers to think more like businesspeople in order to get their inventions out of the lab and into the marketplace. She and her team learned how to hone their pitch and product for prospective customers. Including, for instance, how to make her software stand out among other products already on the market. "In other systems, you can create drawings or paintings on individual layers and those layers slide around in a single plane," she says. "Our technology involves drawing in space, so the underlying representation is 3-D rather than 2-D, and it's really fast and fluid."

As a first demonstration of the capabilities of the software and new media type, Mental Canvas has applied the technology to an illustrated book called "The Other Side" by Istvan Banyai. The book is a modern-day graphic novel, taking the reader on a complex, visual journey. With Dorsey's technology rendering the story in 3-D, the effect is immersive. See for yourself at <https://youtu.be/gXndCJm0vc>.

The company plans to make the drawing software itself available to consumers in the coming year, and to follow shortly thereafter with versions for specific markets, such as storyboarding and industrial design, that require more computing power and functionality. The NSF SBIR grant is intended to provide seed funding as the company gains commercial footing, and feeds back into the nation's innovation ecosystem. "Imagine picture books and graphic novels--and illustrations in general--in the future aren't flat but have active 3-D qualities to move around the story," Dorsey says.

Sarah Bates can be reached at sabates@nsf.gov or 703-292-7738. Investigator Julie Dorsey.

This article originally appeared at http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=135955

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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Aqueduct of Segovia, Spain

This Roman aqueduct is one of the most significant and best preserved ancient monuments left on the Iberian Peninsula. The actual date of its construction has always been considered a mystery although it was thought to have been during the first century AD. Near the end of the 20th century, a German archaeologist managed to decipher the text on the dedication plaque by studying the anchors that held the now missing bronze letters in place. Using this method, he was able to determine that it was Emperor Domitian (AD 81-96) who ordered its construction.

The aqueduct still transports water today. It is first gathered in a tank and then led through a channel to a second tower. There, it is naturally decanted and sand settles out before the water continues its route. Next, the water travels 796 yards on a one percent grade. Then, the structure makes an abrupt turn and it is here that the monument begins to display its full splendor.

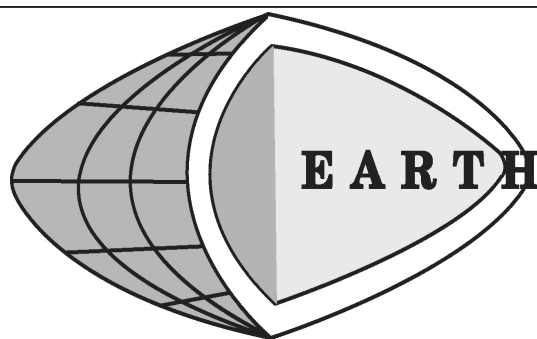
At its tallest, the aqueduct reaches a height of over 93 feet, including almost 20 feet of foundation. There are 79 single arches and 44 double arches, totaling 167 arches in all. The construction follows the principles laid out by Vitruvius as he describes in his *De Architectura* published in the mid-first century.

The first section of the aqueduct contains 36 semi-circular

arches, rebuilt in the 15th century to restore a portion destroyed by the Moors in 1072. The line of arches is organized in two levels, decorated simply, in which predominantly simple moulds hold the frame and provide support to the structure. On the upper level, the arches have a total width of 16.1 feet. Built in two levels, the top pillars are both shorter and narrower than those on the lower level. The top of the structure contains the channel through which water travels, through a U-shaped hollow measuring 0.55 by 0.46 meter diameter size. The top of each pillar has a cross-section measuring 5.9 by 8.2 feet, while the base cross-section measures approximately 7.9 by 9.8 feet.

The aqueduct is built of unmortared, brick-like granite blocks. During the Roman era, each of the three tallest arches displayed a sign in bronze letters, indicating the name of its builder along with the date of construction. Today, two niches are still visible, one on each side of the aqueduct. One of them is known to have held the image of Hercules, who, according to legend, was founder of the city. The other niche now contains the images of the Virgen de la Fuencisla (the Patroness of Segovia) and Saint Stephen.

Information taken from https://en.wikipedia.org/wiki/Aqueduct_of_Segovia including photo on back



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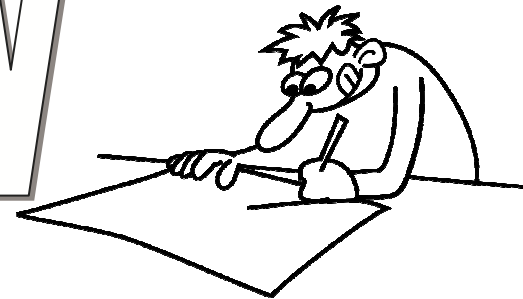
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MEETING MINUTES

Attendees: Officers: Samol, SanFilippo
Board Members: Bandriwsky, Cartwright, Closs, Colucci, Masse, Mooney, Papaj, Scofidio, Wach
Others: Rob Kuberka

Call to Order: President Michael J Samol called the meeting to order at 6:02pm

Committee Reports

Advertising: Half of current advertisers have renewed. Ron will work on contacting other half and pursuing new advertisers. Samol is also pursuing new.

Audit: No report

Bowling: First meeting 9/9/15. Going well.

Bylaws: No report

Education: FE course began.

Endowment: No report

Events: Past President Dinner speaker is Cartwright. Closs is emcee. Venue is Saturn Club. Oct 22. \$70 per person. Board member desired for only paying for incoming and outgoing presidents. Discussion was had to consider past presidents being charged 50%. This year was voted to stay free for past presidents. Tailgating at UB-Ohio game. We'd like to join with ASCE. Offer advertising for event in exchange for them allowing our members to join. Junk Warriors will pick up trash beginning on Oct 17 at 9am. Meet at Brighton/Colvin.

Fundraising: Vendor presented for consideration for car show. Stuart Goodman. His company prints photos onto various items.

Golf: Good turnout. Profit ~\$800.

Historian: No report

Media: No report

Newsletter: No report

Nominating: No report

Scholarship: Need to move money to scholarship checking account for awards. We also need to buy checks for that account. SanFilippo and Samol will handle checks and money.

Scholarship Run: Overall success. Profit ~\$4700.

Sunshine: No report

Y Membership: Contact made with UB Alumni. Hopeful for more info next month. A few other people have come forward.

Adjournment: The meeting adjourned at 7:15pm

Next Meeting: Monday October 12, 2015

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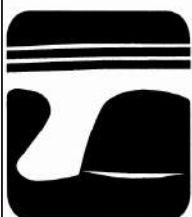
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Possible Future ESB Events

Please send us a quick email if you have even the slightest interest in any of the following potential events. Otherwise, we might delete, modify, or change the event. And, if you have any other ideas for future events, please send them to ESB1894@gmail.com!

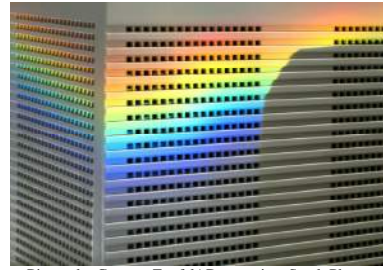
- November 2015 Covanta Energy Tour
- December 2015 Holiday Interactive Networking Event
- January 2016 Dinner and Speaker on Brownfield Cleanup
- February 2016 Engineers Week Activities at the Buffalo Museum of Science
Hamburg Brewery Networking Event
- March 2016 Instrumentation PDH
- April 2016 Junk Warriors/Adopt A Highway Cleanup
??? Tour
- May 2016 ESB Election
UB Solar Panel Tour
- June 2016 Boat Ride
Car Show
- July 2016 Explore Buffalo Event
Scholarship Run
- August 2016 Golf Tournament



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Pioneering Women In STEM

Beatrice Alice Hicks grew up in an engineering family. Her father was an engineer and owner of the New Jersey based metalworking firm Newark Controls Company. She studied engineering and became the first female engineer employed by Western Electric, an opportunity that presented itself when male employees left to fight in World War II. Hicks eventually ran the Newark Controls Company, where she developed environmental sensors later used by the US space program. In 1952, she was named "Woman of the Year in Business" by Mademoiselle. Yet all this success showed Hicks how much of a minority she was. So in 1950, she helped found the Society for Women Engineers (SWE). Today the group has more than 27,000 members. A current SWE member, Veronica Santos, also studies sensor technology. She heads the University of California, Los Angeles Biomechatronics Lab, working to build highly-sensitive, controllable artificial hands. Her research could lead to better prosthetics and autonomous manipulators for use in harsh environments.

When Florence Bascom received her doctorate in geology from Johns Hopkins University, she had to get a special exception from university trustees, who adhered to an official policy against co-education (and emphasized Bascom did not set precedents for other women.) She continued this exceptional trend through her career: she was the US Geological Survey's first female employee, a long-time professor at Bryn Mawr College, and trained most of the important geologists in the

country. Bascom's research focused on crystalline rocks in the Piedmont region, a stretch of the Eastern US between the Atlantic and the Appalachians. Geologist Dorothy Merritts, an expert in environmental geology and geomorphology at Franklin and Marshall College, studies that same area today. Her research focuses on how human activities have transformed the eastern swath of North America since the time of European settlers. Understanding how humans have changed the landscape is crucial to make informed land management decisions.

For much of the early 20th century, oceanography was--by law--a man's field. Women were not allowed on research vessels, for fear of disturbing ship camaraderie. This was the world Margaret K Robinson entered in the 1940s. A business school graduate and former teacher, she started work at California's Scripps Institution of Oceanography as a clerk, recording data on ocean temperatures. Robinson soon began taking classes at Scripps, moving up the ranks and contributing to oceanographic expeditions despite overt discouragement from the Scripps director, who once told her women will never be accepted as oceanographers. Teresa Chereskin is an oceanographer working at Scripps today, researching ocean circulation and temperature. Her most recent NSF funded project focuses on observations of the Drake Passage, which connects the Southern Atlantic and Pacific Oceans.

Info from www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=134386&org=NSF



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How Do Spiders Avoid Getting Tangled In Their Own Webs?

Spiders are able to spin sticky and non-sticky silk. They avoid walking on the sticky silk. In addition, spiders have moveable claws on their feet that grip and release the web's threads as they walk.

Spiders are invertebrate creatures in the *araneae* order of the class *arachnida* in the phylum *arthropoda*. A spider has up to eight eyes, eight legs, and seven silk-producing glands in its abdomen. These glands secrete proteins that are extruded through spinnerets to produce different kinds of silk. Many spiders, particularly orb, funnel, sheet, and cob-weaving spiders, use this silk to build webs with which to catch prey.

We'll focus on orb-weavers because their webs are the most recognizable. Their webs are complex nets of strong dragline threads (frame, spokes) radiating out from the center; and elastic, sticky catching threads spiraling into the center. An orb-weaver begins its web with radial and framework threads using dragline silk, providing a foundation upon which to spiral the sticky catching threads. The spiders then create an auxiliary spiral to help the radial threads support the spider's weight as it builds. Next, the spider uses, and subsequently destroys, the auxiliary spiral as a guide to create the catching spiral, which it dots with glue. What is perhaps the most amazing part of this hour-long process is that orb-weaving spiders often have poor eyesight and weave using only their sense of touch.

The sticky, complex nets of silk used for the catching spiral are effective hunting tools, but have often made people wonder how the spiders themselves avoid entangling themselves in their own webs. Many people believe that spiders have special oils that repel the stickiness of their threads. This, however, has never been proven. Scientists are still not entirely certain how most spiders manage to avoid ending up ensnared in their own trap, but there are a few accepted theories. Spiders can spin different kinds of silk, and not

all of their silk is sticky. In fact, in a spider web only the silk used for the intricate catching spirals are dotted with glue, so spiders know which threads to avoid. In addition to producing different kinds of silk, web-spinning spiders also have an extra set of claws on their feet. All spiders have two claws on their feet; web-spinning ones have three. These claws are used to grasp threads and provide traction as the spider moves along.

Spider silk itself is interesting because of the irreversible transformation it makes from a water soluble liquid inside the spider, to a non-water soluble thread outside of the body. The reaction has nothing to do with the thread's exposure to air once it exits the spider; rather scientists believe it has to do with the act of pulling on the thread that realigns the molecules into a solid form.

Scientists are interested in spider silk for manufacturing purposes, specifically the viscid (sticky for catching prey) and dragline (strong for stiff radials and framework) threads. The viscid thread is comparable to rubber in elasticity, but has more strength. The dragline thread is comparable to steel and Kevlar® (bulletproof material) in stiffness, but is more elastic and able to absorb higher impact.

What makes spiders truly unique in their silk-producing abilities is that they are the only animals that use this silk for multiple purposes. Their multiple silk glands each produce different kinds of silk to aid in mating rituals, create shields for protection from predators, encase their eggs and, of course, weave webs.

<http://www.loc.gov/rr/scitech/mysteries/spiderweb.html>

Happy Halloween from ESB!

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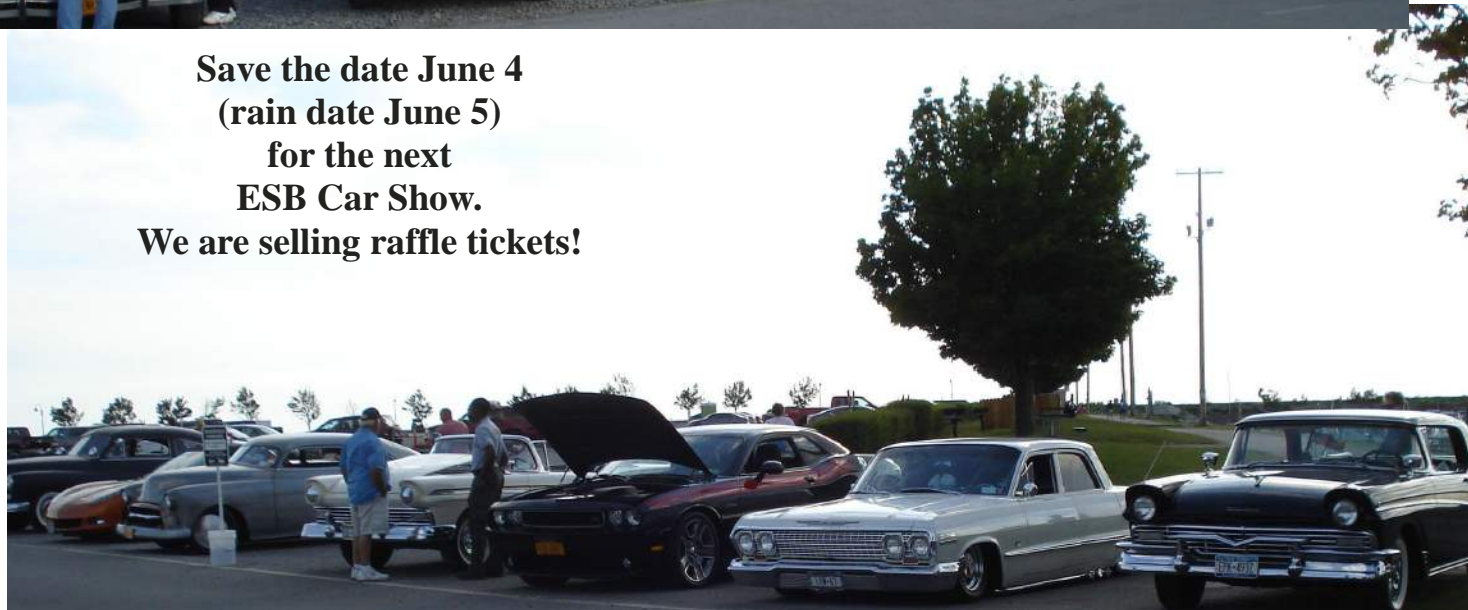
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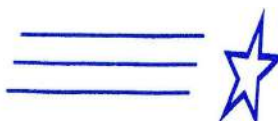


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A single lego brick can take 950 pounds of pressure before it cracks.

Sea lions are the only non-human mammals that have demonstrated the ability to keep a beat.

The Hindenburg made 17 successful transatlantic trips before catching fire.

On 15 August 2015, NASA astronauts ate food that had been grown in space for the first time.

Your voice would be deeper on Venus. Its dense atmosphere would cause your vocal cords to vibrate more slowly.

Moondust smells like gunpowder, according to astronauts.

British pennies are used to adjust the time in London's Big Ben clock tower.

Over 30 of Paul Walker's cars were stolen from a

warehouse within 24 hours of his tragic death.

New York Times crossword puzzle editor, Will Shortz, is the only person in the world to have a degree in enigmatology, the study of puzzles.

Tibetans say hello by sticking their tongues out at each other.

There's a prison in Brazil that allows inmates to pedal stationary bicycles, providing electricity to a nearby city in exchange for reduced sentences.

Benjamin Franklin was an advocate of "air baths" where he would spend about an hour reading or writing in his house completely naked.

8% of American's sleep naked.

The largest county in the US, located in Alaska, is about the size of Germany.

The man who ordered the grounding of US aircraft on 9/11 was on his first day on the job.



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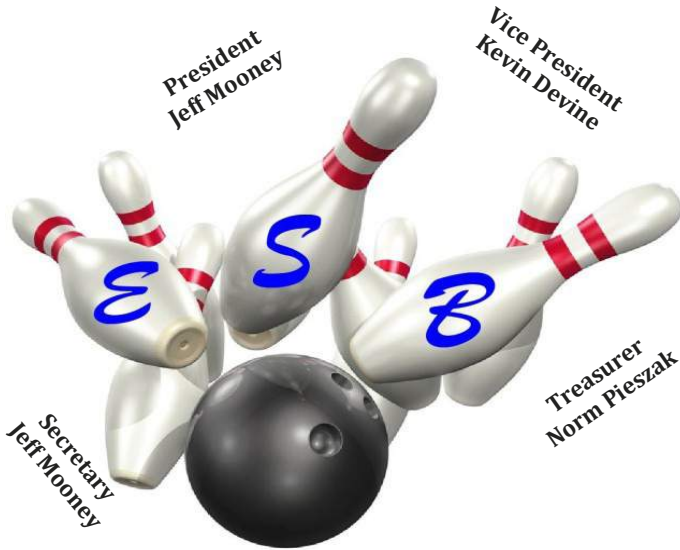
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Team Standings Week 2		Won	Lost
1.	SABER	16	2
2.	ODIES	16	2
3.	TRANSMITTERS	16	2
4.	PROTRACTORS	14	4
5.	DEAD LOADS	12	6
6.	CAD/CAMS	11	7
7.	THE KEGGLERS	9	9
8.	JUNKYARD DOG'S	9	9
9.	AVERAGE JOE'S	9	9
10.	MESSY HOSE	9	9
11.	THE FOUR HORSEMEN	9	9
12.	OUTCASTS	6	12
13.	AZZ CLOWNS	4	14
14.	SPLIT HAPPENS	2	16
15.	Team 17	0	9
16.	Team 18	0	9

Scratch Game

Paul Mosher	259
Tom Mann	258
Hannah Mosher	254
Julia Hay	204

Scratch Series

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Stan Fularz	671
Hannah Mosher	669
Julia Hay	594

Cross Alley w/Handicap

Ed Kilgore	280
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Date of Birth: _____ Married Y N

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Education: _____

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

Resume attached? Yes No

Sports & Hobbies: _____

Name of Spouse and Children: _____

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Children: _____

Name as it should appear on ESB Membership Card: _____

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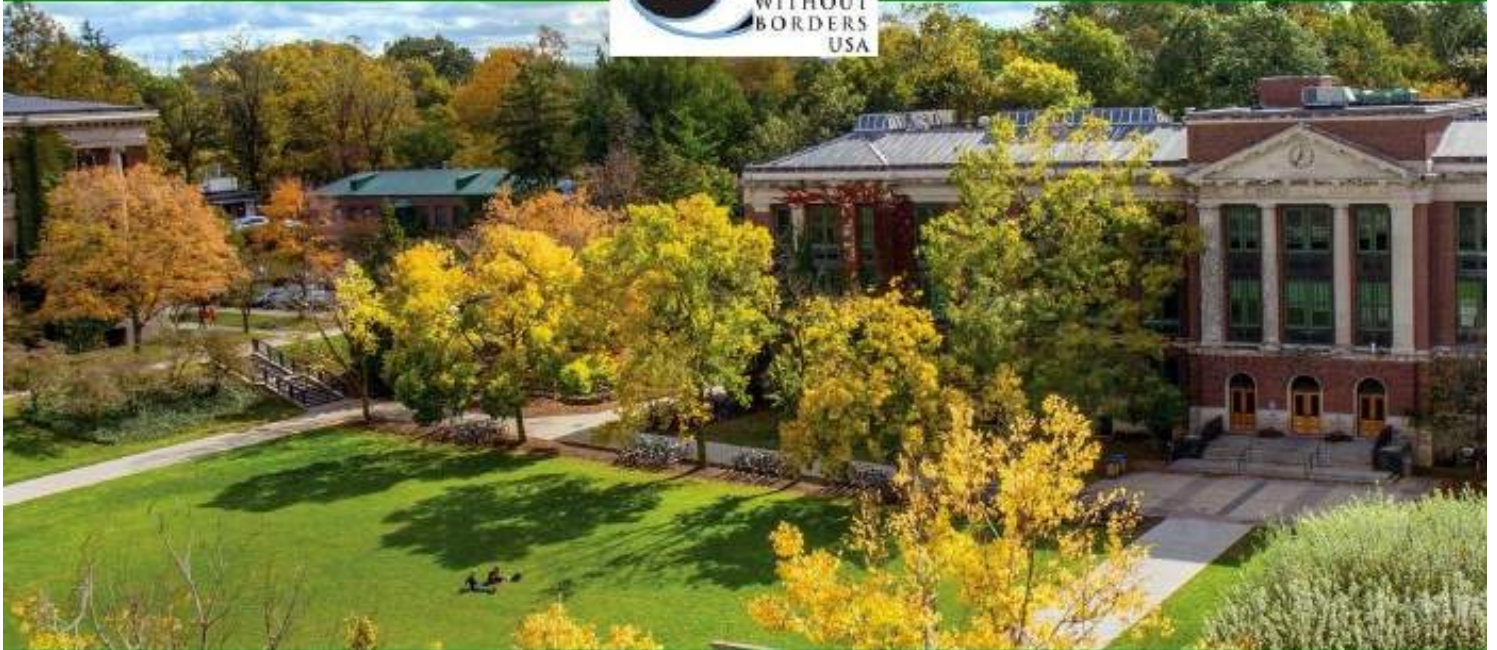
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See Page 8 for information about the Aqueduct of Segovia

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