

Engineers' News

January 2018

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www.FortWayneEngineersClub.org



Find us on 

January Tour



[Wolf Corporation](#)

[3434 Adams Center Rd, Fort Wayne, IN 46803](#)

Thursday January 18th at 7:00 PM

FWEC Board Member Rod Vargo has arranged our January tour of [Wolf Corporation](#).

Get an inside idea of what you might want, or not, in mattress and futon products that we must use day after day, for better or worse. Founded in 1873 using horsehair and cornhusks, this large family business has designed and manufactured for generations using a full range of materials which can still include various springs, conventional foams, memory foams, their own battings (cotton, wool, synthetic), and fabrics. Products include materials for other manufacturers, mattresses, futons, and

toppers (including some Serta branded items). Sales include a true outlet showroom (very low key, comfortable) in the main facility and online retail claiming one-day shipping time to 60% of the U.S. population. Expect at least some discussion of logistics and shipping.

Their facility is easy to find on the northwest corner of Moeller Roads and Adams Center Roads in southern New Haven. Their parking lot entrance is 3434 Adams Center Road. (Adams Center is continuous with Maplecrest Road, using the bridge that FWEC "toured" during its construction.)

Find the FWEC Easier!



The FWEC has invested in a "feather" sign to alert members where our tour entrance is. Look for the sign at future tours.

February Tour



[Tekknowlogic](#)

[6809 Elzey St, Fort Wayne, IN 46809](#)

Thursday February 15th at 6:00 PM

FWEC Board Member Marna Renteria has arranged our February tour of [Tekknowlogic](#).

Tekknowlogic is everything Information Technology, from news and education to support and installation. Right now Tekknowlogic is in their starting/growing phase of business but they hope that does not stop anyone from seeing what thier company has to offer. Currently Tekknowlogic is working on a E-Waste recycling process that is pollution free, that uses only heat and water to break down electronics to the bare components/materials, to advance the idea of recycling as a whole. Tekknowlogic sees a bright future for this city, and anything Tekknowlogic can do to be a part of its growth would be a wonderful experience.

FY18 Membership Year FWEC Board

President: [Bharat Rajghatta](#) (260) 615-1869

Vice President: [John Magsam](#) (260) 482-2843

Treasurer: [Jon Cook](#) (260) 479-7672

Secretary: [Elizabeth Garr](#) (260) 486-0158

1st Year Board Members:

[Dave Gordon](#) (260) 693-2167

[Ryan Stark](#) (260) 456-0809

2nd Year Board Members:

[Rod Vargo](#) (260) 416-0986

[Craig Welch](#) (260) 241-5138

3rd Year Board Members:

[Marna Renteria](#) (260) 744-3407

[Ellsworth Smith](#) (260) 637-6070

Resident Agent: [Ryan Stark](#) (260) 456-0809

Membership & Contact Committee Chair: [Dave Schaller](#) (260) 486-7610

Northeast Indiana DiscoverE Committee Chair: [Rob Cisz](#) (260) 435-0409

Board positions are crucial to the planning of tours and events for the FWEC. Please consult the [FWEC constitution](#) or contact us at info@fortwayneengineersclub.org for information on specific duties on board positions.

Northeast Indiana DiscoverE Engineers Week

Banquet



The Northeast Indiana DiscoverE Engineers Week banquet will be held on Saturday February 24th, 2018 at [Parkview Field's Lincoln Financial Event Center](#).

6:00 PM – Doors open

6:45 PM – Dinner served

The Northeast Indiana DiscoverE banquet features:

- Keynote speaker – To Be Announced
- Academic Award presentations to engineering students
- Citizen Engineer presentation
- [IPFW Bridge Building Contest](#) highlights
- [Future City](#) program highlights
- Student/Engineer visitation program highlights

Dinner Entree Selections

Entrees include a choice of a cup of soup or a salad, vegetable, starch, rolls and butter.

- SLICED ROAST BEEF
 - All beef served medium-rare to medium

- TUSCAN CHICKEN BREAST
 - Broiled chicken breast marinated in a red pepper, garlic and herb vinaigrette; served in a light chicken broth reduction
- GRILLED PEPPER WITH MEDITERRANEAN QUINOA
 - Onions and peppers sautéed then slow simmered with quinoa and tomatoes. Served in a broiled red pepper bell on a nest of lemon-basil buckwheat noodles
- BUTTERNUT SQUASH LASAGNA
 - Butternut squash with bechamel sauce

Purchase Tickets

Banquet tickets are \$30 per person. RSVP deadline is Friday February 16th.

Reservations are made to Nancy Burkey (nancy@rlguimont.com or (260) 422-7081)

Please include:

- Name and organization or company
- Meal entree selection
- Payment method
 - Checks (payable to Northeast Indiana DiscoverE) can be mailed:
 - R.L. Guimont Co., Inc.
 - Attention: Nancy Burkey
 - 923 Spring St.
 - Fort Wayne IN 46808

FWEC Board Meetings



Fort Wayne Engineers' Club board meetings are open to all FWEC members. The next FWEC board meeting will be Tuesday February 6th at 7:00 PM. Board meetings are held on the [Indiana Tech campus in the Academic Center](#) in room ACC-201.

FWEC Membership



The FWEC exists through funding of its membership. Please forward your copy of the Engineers' News to prospective members and encourage their attendance at tours. Remember, the FWEC is the best deal in town, annual membership is \$10. We offer free monthly tours September through May. Please be sure to recommend FWEC membership to your colleagues and friends.

Advertise in the Engineers' News

The FWEC provides advertising space within the Engineers' News. Advertisements are \$10 per issue and limited to ½ page of content. For submissions please contact info@fortwayneengineersclub.org.

December Social



FWEC December Social

FWEC Board Member Rod Vargo provides a history of the FWEC December Social.

President Bharat Rajghatta and his wife Alicia hosted the FWEC social at their home on the evening of December 14, 2017. Fourteen members attended and consumed nearly as many pizzas.

Considerable discussion revolved around attracting and educating kindergarten and

older young people into our professions. Emphasis on some subjects including calculus, particularly at college level, might be outdated and effectively exclude some of the more innovative minds and outlooks. Computers now do much of that math. For the majority of engineers, personal calculations are now either a rough check of the computer results or to define what to ask of computing or programmable logic. Discrete math seems more suited to the everyday practice of many engineering fields and supporting roles such as careers in modern machining, software, "green" energy, and business or financial planning. (Ed. note: The same views appeared recently in a Wall Street Journal opinion piece. In addition, I have routinely asked for five years nationwide and 75-80% of engineers indicated Calculus had been of no benefit whatsoever. About 15% seriously needed it, but often would have been better as a second major or a Masters degree. Many say it is taught improperly.)

The machining industry pays well but is severely short of high school graduates to train and replace a workforce currently at or beyond retirement age. The modern computerized shop requires and will long require career people knowledgeable in materials and setting up programmable equipment. Another severe shortage is ample knowledge in power supplies to shops and industrial facilities. All these career areas have been tagged as outmoded, declining, and not glamorous. In fact, they are probably lifelong specialties in national demand which can be developed rapidly with or without a college degree. Severe business expenses related to power supply issues routinely include loss of programmed logic, loss of the logic modules themselves, and loss of hideously costly raw materials now routinely in use. This paragraph is true nationally and probably internationally, especially as "green" energy and storage are increasingly forced to move from theory to practice over a typically 30-40 year transition period. Various types of shop training through Fort Wayne Community Schools and Ivy Tech are providing incomes and stability similar to much more expensive engineering degrees, with potentially little difference in future mobility. In all cases, hard work and "overtime" are usually the norm with high incomes (above median household, currently approaching \$60,000/year plus benefits).

Electric vehicles are already exacerbating machining and supply problems. But, an extensive discussion of electric cars revealed they essentially eliminate routine maintenance. A viable heavy-duty electric truck is still being engineered, and the supporting infrastructure is more a matter of speculation than reality. Corporations with large truck fleets already recognize that the change in maintenance should be analogous to the 80% reduction from steam to diesel-electric locomotives.

Another similar jump in labor and equipment efficiency occurred with change from DC to AC locomotives. AC inherently controls traction-wheel rpm and therefore allows substantially longer, heavier, and faster trains per locomotive. This, and train crews shrinking to as little as one person, are behind Congress's push for modern brake systems and some automatic speed controls.

Electric trucks seem inevitable for relatively short-haul stop and go duties because of regenerative braking, which is both energy efficient and often more effective. Regeneration converts braking into some recharging of the batteries. The braking can be dialed-in by the driver for individual preferences or local conditions such as weather or cargo loading.

Long haul trucking is primarily a sustained energy output in order to maintain a speed for long periods of time, followed by rapid refueling. So, long-haul trucking is unlikely to become widely electrified for at least many years. Change is also underway allowing for the weight of battery arrays, larger on-board living area, and closely spaced strings of semi-trucks.

To some extent, the difference between a battery and a bomb is how quickly it discharges and how the heat (of discharge or recharge) is managed. A hidden concern is physical expansion and contraction due to temperature changes, because higher performance batteries are usually created (in part) by rolling ever-thinner electrolytic layers into individual cells.

We noted that the majority of disruptive innovators, since the 1920's, did not remain in college for long. Meanwhile, engineering departments still speak of "weeding out" students. It was also noted that the cost of education now likely exceeds plausible return on investment, so an array of grassroots and political changes are underway.

The differences in cognitive development between individual children were widely discussed, as well as whether and how to let a child follow their dreams and instincts. Generally, it seemed best to enable pursuits and then subtly guide choices and interpersonal skills. The main reasons seem to be children best know their internal spheres of attention span and may better perceive local realities as they currently are. Examples which led to successful careers were helping a child to finance a Bobcat or indulging a delight in shooting off serious toy rockets. Attention deficit "disorder" can be a prelude to highly successful technical ability but, again, interpersonal skills matter.

Multiple sources over the last twenty years indicate that reading technical material is important well before Fourth Grade. It permanently affects physical development of brain structure analogous to random access memory in a classic personal computer. For example, at Fort Wayne Community Schools, details of reading scores in Third Grade closely predict that cohort's Eighth Grade math scores. Brain MRI studies show physical structures are involved.

Parents are necessary when choosing a college, particularly for engineering. Matching the personality of the school to the disposition of the student is essential. A harsh reality comes quickly after graduation when glamorous jobs turn out to be

long working hours and burn out, particularly in high cost of living locations. The West Coast is experiencing problems retaining young hires or attracting experienced people. Indiana in general seems to be booming.

Consensus was that automation and technology are not reducing the overall availability of jobs, although skills matter. Sports and athletics are proliferating. Team uniforms have become vastly more aesthetically complex and are replaced every year, even for young children. Automobile wheel rims used to be simple steel affairs and similar across vehicles for a decade. Now, wrecking yards have stacks of sub-model specific "alloy" rims of expensive and vulnerable aluminum, but strictly ornamental and not lighter.

Sherri and Ryan Stark have put a lot of time into home building their RV-12 aircraft featured in two of our June socials. They are now particularly focused on fiberglass around the cockpit exterior. It is years too early yet to dream of trips. Spouses Joan Woerner and Rod Vargo drove 8500 miles this year in their Ford Econoline "RV" conversion, but it is too early to plan 2018 around wedding dates and other matters. A nearly perfect upgrade has been a Thetford Curve portable toilet including liberal use of an essentially scentless Camco TST chemical (usable in RV holding tanks), good for 8 days even in an enclosed van or a bedroom after knee surgery.

The SweetAviation tour had been a rousing success. Cirrus aircraft are a major leap in image, comfort, and safety compared to older light aircraft. Many of us would also like to attend AirVenture, the annual Oshkosh aircraft gathering in Wisconsin each summer, but work and family are issues. Our local Experimental Aircraft Association is a major player in the event and would likely facilitate being in the action, plus camping on the airfield.

Bharat pointed out the imminent U.S. income tax "reform" seems quizzical. Most countries mail residents a bill which may be appealed, but here people get to manipulate what they might owe.

Somehow, the tax discussion led to the tough trade offs around the use of atomic weapons in World War II, peacefully revealing quite an array of viewpoints and factors among even our small group. Considerations reached back as far as World War I including simply running out of young people to fight, legacies of the Zimmerman telegram, and tragic consequences of northern typhoons. Most of us knew Americans (occasionally Japanese) who would not have survived a conventional war, or ourselves been born.

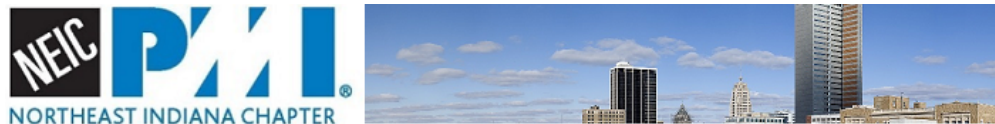
Careers among us had evolved considerably. Most had obtained additional "math" training for professional MBA, financial and/or tax management, and/or insurance reasons. Many had experienced the uncertainties in starting or sustaining businesses. The demise of established technologies has often been much slower

than imagined, typically measured in decades, with much opportunity in relocating equipment or keeping it running reliably. Combustion engines, lubricating oil, and the electrical grid are undergoing change or major upgrades in response to alternative, often transient, technologies.

A vast sector and severely underappreciated career path is sales. Sales representatives are generally free to travel, entertain at corporate expense, and cultivate a large number of contacts and resources. On the negative side, meeting sales goals may or may not be very stressful - a good sales person has often developed gainful alternatives and influential friends.

Sincere thanks to Alicia and Bharat for opening their home to us.

Northeast Indiana Chapter Project Management Institute



NEIC Curling Fun Event

NEIC PMI will begin 2018 with a Learn to Curl fun event where you will not only learn about founding of Fort Wayne Curling Club, but will also have a blast learning the fun sport of Curling

The Winter Olympics are a huge boon for curling as interest skyrockets due to the television coverage. In 2013, the Fort Wayne Curling Club was 24 members and had concerns about properly taking advantage of the upcoming Winter Olympics while curling on hockey ice. With less than \$500 in the bank, the club took on the risky initiative to build their own facility. 3.5 months and \$375,000 later they had their own facility and are now thriving. With over 100 members, the club is now poised to reap the benefits of the 2018 Winter Olympics that start in less than a month. Hear from club founder, Craig Fischer (a former PM-NEIC member), how the club made the dream of a dedicated facility come true. And learn to play the game as well! Register now and meet with NEIC PMI at [Fort Wayne Curling Club \(3674 N Wells St, Fort Wayne, IN 46808.\)](#)

Wednesday 31 January 2018, 06:00pm

6pm - Presentation and Pizza

7PM onwards - Curling

Registration Options:

Curling+ Presentation+Food - \$40 Registration Price (plus Pizza/soft drinks provided)

Attendee Only Option - \$15 for Presentation plus food (but, no curling)

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