



[www.FortWayneEngineersClub.org](http://www.FortWayneEngineersClub.org)

**Engineers News**

**January 2015 - Vol. LXXVII No. 5**

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### **January Presentation**

MSKTD and Associates Thursday, January 22nd, 6:30 PM  
1715 Magnavox Way, Fort Wayne, Indiana 46804

MSKTD and Associates ([www.msktd.com](http://www.msktd.com)) will host a presentation for the FWEC regarding the Ash Brokerage ([www.ashbrokerage.com/blog/skyline](http://www.ashbrokerage.com/blog/skyline)) construction project currently underway in downtown Fort Wayne. The presentation will include: a project overview, design renderings, architectural, mechanical, and electrical information. The construction progress is being monitored by various parties, click here (<http://oxblue.com/open/Weigand/DPG>) for a time lapse of the construction project as it progresses.

Thank you to FWEC member and Northeast Indiana DiscoverE committee member Jon Rowe for his work in arranging this presentation.

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### **2014-2015 FWEC Board Members**

During the January 6th board meeting the board voted to have Rob Cisz fill the open 2nd Year Board Member position. The 2014-2015 membership year is now functioning with a full board. Please consider serving on the board in the future.

Below are the 2014-2015 FWEC board members. Board positions are crucial to the planning of tours and events for the FWEC. Please consult the FWEC constitution (<http://fortwayneengineersclub.org/constitution.pdf>) or contact us at [info@fortwayneengineersclub.org](mailto:info@fortwayneengineersclub.org) for information on specific duties on board positions.

#### **Current 2014-2015 Membership Year Board**

President: Marna Renteria	Vice President: Rod Vargo
Treasurer: Ryan Stark	Secretary: Elizabeth Garr
1st Year Board Member: Mike Magsam & Jack Phlipot	
2nd Year Board Member: John Magsam & Rob Cisz	
3rd Year Board Members: Dan Delaney & David Momoh	

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### **Meet your FWEC Board**

New board member Rob Cisz is willing to share some information about himself and his new role on the 2014-2015 FWEC board. His message is below.

I am excited to serve on the FWEC Board again. I was an officer back in 2006 through 2009 and really enjoyed getting to meet some of the club members over the years.

I was asked to write a little blurb about myself, so without further ado, we sally forth. I graduated from Trine University, Angola, majoring in Environmental Science/ Biology, with the equivalence of a minor in Chemistry, I don't believe they issued minors in Chemistry back then. Trine

University was a good Petri dish, (cultivating learning, not bacteria), specifically in that I had a lot of hands-on time running Atomic Absorption Spectrometers (AASs) and other instruments. Since most of our equipment that we used at the old Trine was donated and often had malfunctions, we were taught how to repair the issues. This type of experience well equipped me for my first job where I could not only run, but fix the equipment. Speaking of which, my first job in Fort Wayne was as a bench chemist, where I'd run analysis on treated hazardous waste samples to ensure they meet the U.S. E.P.A. regulatory limits. Running an Inductively Coupled Plasma 2.5 Plasma-Spectrometer, a Varian 400 Graphite tube Atomizer, and Varian 300 AAS, samples were tested with the Toxicity Characteristic Leaching Procedure method, to detect the isotope levels of various metals. I also worked as a contracted employee out at the GM Fort Wayne Assembly Plant for 12 years, managing their regulated hazardous waste and recycling programs. I was a part of the team that helped GM Fort Wayne Assembly become the 1st GM assembly plant in North America to achieve zero landfill status. I'm now working as the Environmental & Safety Tech, out at Altec National Utility Equip Company, working with environmental permits, chemical safety data sheets, and promulgating the corporate safety culture. I look forward to serving the club and all the great things it does for Fort Wayne, and of course going on more great tours! – Rob Cisz



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## 2014-2015 Membership Dues

Please note that any member not yet having paid their 2014-2015 membership year dues is now delinquent. Delinquent members will be receiving a notification from Treasurer Ryan Stark via email. Any member with questions regarding their dues status should contact Ryan at [info@fortwayneengineersclub.org](mailto:info@fortwayneengineersclub.org).

## 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 with monthly tours at \$10 per membership year. Please be sure to recommend FWEC membership to your colleagues and friends.

## Advertise in the Engineers. News

New for the 2014-2015 membership year! The FWEC will be selling advertising space within the Engineers. News. Advertisements are \$10 per issue and limited to page of content. For submissions please contact [info@fortwayneengineersclub.org](mailto:info@fortwayneengineersclub.org).

## December Social and Tour History

The December social was well attended by FWEC members, friends, and families. The tour of the Mad Anthony brew house was given by associate brew master Joe Martin. Joe also works at Brewer.s Art, a brew supply store, and was able to provide a robust tour noting the importance of ingredients and equipment function. Thank you to everyone who attended.

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## Fort Wayne Coder Dojo

Fort Wayne Coder Dojo is a club for students (and adults) interested in Minecraft modification skills.

Noel Knox ([noelknox@yahoo.com](mailto:noelknox@yahoo.com)) can be reached for further questions regarding the club and their operations. The club meets on the Indiana Tech campus in the Zollner Engineering Center, Room Z103 (the software engineering lab). Their next meeting is Saturday January 17th.

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## Northeast Indiana DiscoverE Committee

The Northeast Indiana DiscoverE Committee now has its new website: [www.discovere.in](http://www.discovere.in). The website is still getting updated with new and relevant information.

The Engineers. Week banquet will be held on Saturday February, 28th. The banquet presents Academic Awards to local engineering students during the course of its program. The FWEC website ([www.fortwayneengineersclub.org/donate.html](http://www.fortwayneengineersclub.org/donate.html)) can be used to make academic award donations. All FWEC members are encouraged to attend the banquet. Please visit <http://discovere.in/engineers-week/> to learn more.

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## Editorial . The Future is Here Part 1

The following is an editorial from FWEC Vice President Rod Vargo

Our club tours help to reveal a new world in which Indiana is increasingly a leader. This article will be the first of many which try to tie together a future that is already here, and attempt to discuss the risks and opportunities beyond. The obvious outcomes are and will be unavoidably magical IF humankind doesn't blow it, due to fear.

Existing technology already in place means that we cannot possibly employ everyone (locally or globally) from traditional viewpoints. As an example, industrial robotics often produce goods such as beverages and packaged snacks from start to finish without rejects, on pallets and in/out of warehouses, at mind-boggling volumes and speeds. Increasingly, the only human factor physically on a line may be a few people to monitor and perhaps maintain as much as a quarter mile of machinery. Insurance considerations alone will soon force transportation into robotically driven trucks and taxies, much as has already happened to warehousing.

For historical perspective, I (barely) remember the transition after 1950 near New York City, certainly not a backwater, from groups of men delivering winter heating coal to homes by the burlap sack-full, to one guy using a small dump truck and chute. Not much later, coal was replaced by far cleaner and more efficient natural gas supplied by underground pipes (1920's era and still in use). Political cartoons stopped depicting Congressmen in gas masks complaining about environmental nutcases.

Ditto, every grain of wheat is no longer manually handled in sacks from field, to/from boxcars or barges, and then to/from the holds of now-tiny freighters at major ports by gangs of hard laborers using hand trucks and cargo nets. The "good old days" were a young person's game. I remember the wonder (as a surgical assistant) of early joint and coronary artery replacements, not to

mention sewing a newfangled Teflon patch on a heart pierced by an ice pick (remember those?).

The situation is rapidly accelerating now-a-days to eliminate highly educated professions, along with their expensive educations, mistakes, overheads, and roadblocks. The best brief overview can be found in the YouTube .Humans Need Not Apply. <http://youtu.be/7Pq-S557XQU>.

My son, with an economics and urban renewal degree, points out that most supply and demand principles no longer work because "we are no longer in an age of scarcity." Industrial robotics, modern energy sources, other technology, and a general explosion of knowledge have placed us into an age where nothing (of importance) is actually scarce or inherently expensive, including water. The problems tend to be distribution, employment, and adequate prices in the face of glut and potentially ruinous debt.

Current leaps in human health, longevity, global affluence, now decelerating population growth, and decelerating environmental impacts would have been largely unthinkable (and certainly not politically correct predictions on campus) when I was in graduate school thirty-five years ago.

We literally seem to be at a point as pivotal for humans as the ending of the last ice age. A little more than 100 centuries ago, a mountain range of ice was visible here. It loomed precipitously upwards from the eastern third of Fort Wayne to some 5000 feet higher than our present downtown. Near Columbus, Ohio, the height was closer to 11,000 feet, looking much like Salt Lake City today on the edge of the Wasatch Range. I'm told our ice probably melted out of Fort Wayne.s sight in only 50-150 years.

Indiana appears positioned and able to help lead the way, even globally. The future from here will be about how we recognize and manage things. In the meantime, consider FWEC tours as potential windows on the present and future, and stay tuned for more of these articles.

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## **FWEC Board Meetings**

Fort Wayne Engineers' Club board meetings are open to all FWEC members. The next FWEC board meeting will be Tuesday, February 3rd at 7:00 PM. Board meetings are held on the Indiana Tech campus in the Zollner Engineering Center in room Z-203

([www.indianatech.edu/SiteCollectionDocuments/Campus\\_Life/Campus\\_Map.pdf](http://www.indianatech.edu/SiteCollectionDocuments/Campus_Life/Campus_Map.pdf)).

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## **Engineers. News Past**

The FWEC has a significant history; Treasurer Ryan Stark and his wife were able to find past Engineers News documents dating back to 1938! [Here is an excerpt of the past newsletter January 20th, 1944](#)

### **PRESIDENT.S MESSAGE**

The importance of a non-partisan attitude in the participation of the Engineers Club in Civic Affairs cannot be overemphasized. Too often, when a civic organization enters into the consideration of a controversial issue, it is only too easy to find that somewhere along the line someone has .an axe to grind.. This person, by one means or another, gets hit ideas adopted. Even though the remainder of the group is honestly seeking the right answer, strong pressure by one man with preconceived opinions can wield great force. As a result, recommendations lose authority as the honesty to the considering group can easily be questioned.

The Engineers Club, on authority of your Council, is entering into consideration of the Post-War Planning for Highway and Street Improvements in Fort Wayne and thesurrounding area. This important Civic duty will be handled by the Standing Committee on Civic Affairs. Thousands of words have already been printed in the local newspapers on

the general subject and in some respects certain real differences of opinion have been exposed.

This Committee enters this project with an open mind. Its membership is chosen with the idea of getting a capable, honest, open-minded group to consider and weigh the plans already advanced and others which may subsequently be brought up. Your cooperation is solicited in giving this committee your views on the subject and your reasons for these views.

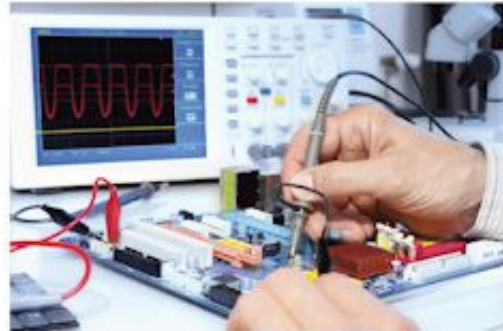
From this mass of information, a report will be prepared which should be of benefit to the State Highway Commission, the City of Fort Wayne, and all citizens in deciding the best Post-War Highway and street program. . Lew. Z. Gossman

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## SIMPLIFY YOUR WORLD

Zuno is an electrical engineering services company. We specialize in the design, build, integration, test & support of systems; from complex to simple and everything in-between. Understanding the objectives that drive a project allows us to create designs that are intuitive and easy to use. Our talented and experienced engineers have a broad range of skills in electrical, mechanical and systems engineering. We focus in industrial control, circuit design, image/signal processing, machine vision, and embedded software solutions.



## SKILLS



### Electrical Engineering

- Microcontroller Circuit Design, Programming and System Integration
  - > Brands
    - Microchip
    - Atmel
    - ST
  - > Development Tools
    - MPLABX
    - Atmel Studio
    - IAR Workbench
- Schematic Capture and PCB Layout
  - > DipTrace
  - > CadSoft Eagle
  - > Altium Designer
  - > Mentor Graphics PADS
- Image and Signal Processing
  - > Digital Signal Processing
  - > Image Correction and Feature Detection
- Control Systems
  - > Opto22 PAC Project Pro
  - > Groov web based industrial HMI

- > EMU (Energy Monitoring Unit)
- > Cognex
- > Machine Vision Systems

- Simulation and Modeling
  - > Using Matlab / Simulink, Python
- System Instrumentation and Testing
  - > Utilizing National Instruments Equipment and LabView
- > Full Suite of Test Equipment

### Mechanical Prototyping

- > 3-D Printing Capability for Rapid Prototyping and Proof of Concept
- > Expert level CAD users
  - AutoCAD

### Contract Manufacturing

- > PCB Assembly and Test
- > Light Mechanical Assembly
- > System wire harness prep and assembly
  - Schleuniger 9500

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We provide a multitude of services and roles. We can design a complete control solution from scratch; hardware, control software, HMI and installation of hardware. Or, we can provide just a partial solution if your engineering team would like to tackle some of the design.

We also support and service existing systems. If you have a legacy system that you need serviced, repaired or even redesigned we can provide that service on site or remotely.



## EMBEDDED SOFTWARE

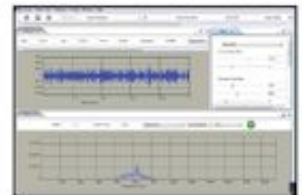
We can implement virtually any embedded software solution. We have had experience ranging from 8-Bit microcontrollers programmed in assembly to 32-Bit ARM processors running embedded Linux, and everything in-between.

The photo to the right is a product we designed for a customer to thermoform high end boot liners for the snow and water sport industry. This design implements an integrated 120/240 VAC power supply, microcontroller, sensors for temperature feedback, and a user interface to control two heater units.



## SIGNAL PROCESSING

Our engineering staff has a strong background in image and signal processing. We have developed many signal processing solutions, from military applications for image processing, to industrial solutions for machine reliability. We typically implement prototype algorithms in Matlab or Python using modeled or captured data. We can then port those solutions over to an embedded solution, or work with our trusted software development provider Ensfire Software to develop a standalone application.



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