



Fort Wayne

ENGINEERS' Club

www.FortWayneEngineersClub.org

Engineers News

March 2014 - Vol. LXXVI No. 6

March Tour

Fort Wayne Metals

Thursday, March 27th, at 6:30 PM
Building A, 9609 Ardmore Ave, Fort Wayne, IN 46809

Founded in 1970, Fort Wayne Metals (FWM, <http://www.fwmetals.com/>) is the world's leading supplier of stainless steel, titanium, Nitinol and specialty alloy wires and cables for demanding applications in the medical device, aerospace and other industrial industries. The company operates seven production facilities, a Research and Development center, and an equipment design and fabrication facility in Fort Wayne, IN and one production plant in Castlebar, Co. Mayo, Ireland, totaling nearly 400,000 ft². The newest facility in Columbia City includes a furnace where the company is melting Nitinol, a shape memory metal. An ISO 17025 registered Metallurgical Laboratory provides technical support for the development of processing for new alloys, including digital scanning calorimeter (DSC), corrosion testing, high resolution Metallograph, and fatigue testing. The FWM facilities contain a variety of equipment for wire drawing, annealing and post processing. Each facility includes extensive testing equipment for the assessment of mechanical and physical properties. FWM has approximately 650 employees.

FWEC Tin Caps Night

The FWEC will again have a night out at the Tin Caps on Thursday May 22nd with the first pitch at 7:05 PM. We'll be sitting in the Home Run Porch (http://www.milb.com/documents/9/4/6/64039946/2014_Seating_Chart_gnpx3efg.pdf) and will have the Grand Slam package that includes and all you can eat menu of: hot dogs, pulled pork (NEW!), brats with sauerkraut, pasta salad, potato salad, macaroni & cheese, apple crisp dessert, and complimentary soft drinks. The Grand Slam package is available from 6:05 PM to 7:35 PM. Additionally, this is a Tin Caps Thirsty Thursday (\$1 domestic draft beer), Vera Bradley's Turn the Park Pink to raise breast cancer awareness, and a post-game fireworks night. Tickets are \$26 per person. Please RSVP to FWEC Treasurer Ryan Stark (fortwayneengineersclub@yahoo.com) prior to May 5th.

May Tour

Fort Wayne Water Treatment Plant
Thursday May 29th at 6:30 PM

More tour information to be announced in upcoming newsletters.

Welcome New FWEC Member

Welcome to new member Lucas Satter, BSME and new student member Kyle Tew MET at IPFW. Please encourage your co-workers to join the FWEC; at \$10/year it's one of the best deals in town!

FWEC Display at the Maker Faire

The FWEC is still looking for people to help create a display featuring the FWEC at the Maker Faire (<http://makerfairefortwayne.com>). What do you enjoy most about the FWEC? We'd like to share that with attendees and tinkers at the Maker Faire. The Maker Faire will be held in September, so we've plenty of time to come up with GREAT ideas. If you're interested please contact us at info@fortwayneengineersclub.org.

Allen County Public Library – Maker News

The Allen County Public Library main branch computer room, which the FWEC visited in September in conjunction with the Access Fort Wayne TV studios has been converted into a Maker Lab! For more information please visit: <http://tekventure.org/maker-station/>.

February Tour History

Twenty-four people attended the FWEC February tour of WaterFurnace International headquarters near the airport on the south edge of Fort Wayne. Built in 1991, the 115,000 ft² administrative and manufacturing facility is very comfortably heated and cooled using its 3 acre detention pond, 8' deep, as a geothermal source. Most of the pond's size would have been required of any similar industrial facility for storm water control. Maximum capacity of the facility's heating and cooling units is 153 tons (1.84 million BTU), not counting another 168 tons available to support research and testing needs. The heating includes hot water and automatic on-demand snow-melt of sidewalks and loading areas. The building's utility rooms tie up 83% less floor space than normally needed.

Each unit of product is essentially custom designed and built from mix and match components, including smart electrical controls which have 150,000 possible variations. Their products can heat and cool virtually all air, water, and/or glycol residential or commercial systems, new or old. Even commercial units can run on a single-phase power supply. Units on the production lines ranged in size from 1.5 ton (18,000 BTU) to 30 tons (360,000 BTU). Production time is normally 3 days but orders can be built and shipped within 24 hours for an additional fee. Over half the orders are for North America, but ample shipments go worldwide including China and quite a few to South Korea, despite competitors almost everywhere.

WaterFurnace itself started in a Fort Wayne garage, but is a market leader through extensive research and development, particularly electrical innovations. They are proud of their fan systems for moving heated/cooled indoor air which greatly prolong motor life, reduce noise, and can move anywhere from 30-120% of rated capacity depending on need (as sensed by proprietary electronics).

Each production line is a continuous bench topped with rollers. The line starts with a shipping pallet and components are added atop the pallet as it moves through the factory. All stations along the line are ruled by computer through bar codes, assuring each custom designed unit is correct and storing test data during the assembly process in case any further specialization is required during the field installation. The workers appeared experienced, focused, and comfortable with their workload and employer.

Geothermal fluids in the outdoor lines tend to be water-glycol or methanol. New

lines are usually the polyethylene used for natural gas pipes with at least a 55 year life expectancy. Geothermal sources can include ponds, well water, lines buried horizontally underground, or lines sunk vertically like wells (requiring perhaps 20' X 20' of yard space). Horizontal lines can be run affordably from front yard to back yard under homes and landscaping because there is a glut of directional boring equipment left over from the fiber optic boom. The outdoor portion of a WaterFurnace home installation adds about \$8,000 compared to new 95% efficiency natural gas systems, but monthly operating costs are 70-80% less. The residential WaterFurnace set-up also preheats water to 110 °F prior to further heating, if needed, by gas or electric.

Northeast Indiana Engineers' Week – Citizen Engineer

Northeast Indiana Engineers' Week awards a Citizen Engineer (<http://www.indiana-eweek.org/indiana-citizenpw.html>). This award has roots back to 1955. The 2014 Citizen Engineer recipient was our own FWEC Treasurer Ryan Stark!

Northeast Indiana Engineers' Week Academic Award Recipients

The Northeast Indiana Engineers' Week banquet was held on Saturday February 22nd. The FWEC in conjunction with other Northeast Indiana Engineers' Week societies presented regional students with \$1,000 academic awards.

Award recipients are:

- Sukaynah Abu-Mulaweh, IPFW, Computer Engineering
- Carter Delaney, University of Cincinnati, Mechanical Engineering
- Andrew Eckrich, Dayton University, Mechanical Engineering
- Tyler Haber, Trine University, Mechanical Engineering
- Jordan Leising, Purdue, Industrial Engineering
- Dalton Mann, IPFW, Mechanical Engineering Technology
- Charles McIntosh, IPFW, Electrical Engineering
- Zachery Rider, Indiana Tech, Energy Engineering
- Daniel Schmidt, Indiana Tech, Biomedical Engineering
- Megan Smart, Trine University, Design Engineering
- Kyle Tew, IPFW, Mechanical Engineering Technology

2013-2014 FWEC Board

President: Michael Magsam
Vice President: Marna Renteria
Treasurer: Ryan Stark
Secretary: Elizabeth Garr
1st Year Board Members: John Magsam & Rod Vargo
2nd Year Board Members: Dan Delaney & David Momoh
3rd Year Board Members: Jim Delaney & Jack Philipot

FWEC Board Meetings

Fort Wayne Engineers' Club board meetings are open to all FWEC members. The next FWEC board meeting will be Tuesday April 1st 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).

Northeast Indiana Engineers' Week Academic Award Contributions

Does your company or business give back? Would you like to see them support local engineering and engineering students? The Northeast Indiana Engineers' Week Committee is looking for companies that would be interested in contributing toward the Academic Awards that are presented to local engineering students during National Engineers' Week. If you, or your company, have interest in contributing please contact Jake Dinius at j_dinius@yahoo.com. Additional information regarding academic awards can be found: <http://www.indiana-eweek.org/indiana-academic.html>.

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