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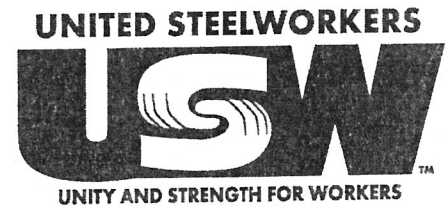
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# United Steelworkers Local 105 Forerunner

Local 105 Forerunner  
 Issue Date: October 26, 2017 Volume #17 Issue #40 Mailed every 3 weeks

<b>Office</b>	<b>Name</b>
President	Brad Greve
Vice. Pres.	Robert Bartholomew ("Bart")
Guide	Roy Hutt
Rec Sec	Pat Stock
Griev Chair	Josh Meyrer
Fin Sec	Mike Nicholas



### Meetings & Events November 2017

11/2	1:30pm	S.O.A.R. Mtg
11/8	3:30pm	Committeeperson Mtg E-Board Mtg
11/16	12 noon	Local 105 Retirees Potluck
11/20	6 pm	Q-C Fed Delegates Mtg @Local 25
11/21	6:20am	Regular Business Mtg
	7:20am	" " "
	3:20pm	" " "
	6:20pm	" " "
	11:20pm	" " "
11/22	12 noon	Local 105-2 (Sivyer Steel)
	3 pm	Local 105-2 (Sivyer Steel)

All meetings @ USW Local 105 Union Hall  
Unless designated otherwise



### **Solidarity March Pub Crawl**

We will be having a solidarity march on November 4th in the Village of East Davenport. The march will start at 3pm. Prizes will be raffled off at each bar. Must be present to win. Pizza and wings will be available at the last stop, The Mound.

Bootleggers – 3:00 – 4:00 pm  
 Bleyart's Tap – 4:00 – 5:00 pm  
 McClellan Stockade – 5:00 – 6:00 pm  
 The Mound – 6:00 – 7:00 pm – Grand Prize  
 Drawing and 50/50 drawing

### **CHEER BASKETS RAFFLE**

WOMEN OF STEEL ARE RAFFLING OFF 2 CHEER BASKETS  
 1- HAS WINE AND LIQUOR  
 1- HAS CRAFT BEER  
 THE DRAWING WILL BE AT THE NOVEMBER 21 ST BUSINESS MEETING  
 6:20 PM  
 WHOEVER NAME IS DRAWN FIRST GETS TO DECIDE WHICH BASKET  
 THEY WANT  
 TICKETS ARE \$1.00 A PIECE OR 6 FOR \$5.00  
 ALL PROCEEDS GO TO MAKING GEAR BAGS FOR  
 FOSTER CHILDREN

### **United Steelworkers Poker Tournament**

Sponsored by:  
**NEXTGENERATION**

**When:** Friday, November 10, 2017

**Where:** Local 105 Union Hall  
 880 Devils Glen Rd  
 Bettendorf, IA

**Time:** Doors open at 6 pm  
 Tournament starts at 7pm

**Entry Fee:** \$35      **Buy Backs:** \$10

**Contact Info:**  
 Mike Nicholas: 309 368-9081

Bryan Zabel: 563 271-5004  
 Brandon Greve: 563 343-1377  
 Union Hall: 563 355-1181

**Free Walking Tacos with entry fee!!!**

### **105 Contest Continues**

This week's number for direct deposit users to add to the cents of their deposit amount is 20. If the sum totals 105 you win a free T-shirt.



## Labor Union Endorsed Candidates - November 7

Diana Broderson	Mayor	Muscatine
Kelcey Brackett	City Council At-large	Muscatine
Osmond Malcolm	City Council Ward 2	Muscatine
Rick Dunn	City Council Ward 1	Davenport
Maria Dickmann	City Council Ward 2	Davenport
Mike Matson	City Council Ward 7	Davenport
Toby Paone	City Council At-large	Davenport
Kate Larsen	City Council Ward 2	Dubuque
Ed O'Neill	City Council Ward 3	Clinton

### Union Made Toys

#### Did you know that ALL Hasbro branded games and toys are all union made?

When you're searching for toys to buy for your kids or others i.e. **Toys for Tots** this holiday, why not choose products that are union-made-in-America?

**Hasbro Brand Toys**, Baby Alive, Battleship, Beyblade, Boggle, Busy Basics, Candy Land, Captain America, Chuck and Friends, Chutes and Ladders, Clue, Connect Four, Cranium, Crib Life, Cuponk, Disney, Easy-Bake, Explore N Grow, Family Game Night, Fantastic Four, FurReal Friends, G.I. Joe, Gift Cards, Gloworm, Guess Who?, Hasbro Games, Heroscape, Hi-Ho! Cherry-O, Hungry Hungry Hippos, Iron Man, KRE-O, Lite-Brite, Littlest Pet Shop, Marvel, MEMORY, Mighty Muggs, Milton Bradley, Monopoly, Mousetrap, Mr. Potato Head, My Little Pony, MY3D, Nerf, Operation, Parker Brothers, Play-Doh, Playskool, Rubik's, Scrabble, Sesame Street, Simon, Sit 'N Spin, Sorry, Spider-Man, Star Wars, Strawberry Shortcake, Super Soaker, The Game of Life, The Incredible Hulk, Thor, Tinkertoy, Tonka, Toy Story 3, Transformers, Trivial Pursuit, Trouble, Twister, U-Build, Weebles, Wheel Pals, Wolverine, Yahtzee

### Battery power: Aluminum ion competes with lithium in Clemson Nanomaterials Institute study

#### **MEDIA RELEASE**

Clinton Colmenares, Clemson University Relations

October 18, 2017

CLEMSON, South Carolina — While cell phones, laptops and cars become more energy efficient, the development of one important ingredient common in all these devices, and many more, has lagged: the batteries used to power them.

"In any given battery, something is either very rare or it's toxic or it's expensive. Those are the things that have been plaguing the battery industry," said Apparao Rao, the R. A. Bowen Professor of Physics at Clemson University and director of the Clemson Nanomaterials Institute.

For example, today's lithium ion batteries have high power density (they recharge fast) and high energy density (they stay charged a long time). But lithium is rare, expensive and toxic. It can also develop dendrites, like splinters, that can short-circuit a battery and lead to a fire.

Rao; Ramakrishna Podila, assistant professor of physics and astronomy; and their teams at the institute are replacing lithium with aluminum as the key element of batteries of the future.

"We wrap food in aluminum foil," Rao said. So, it's non-toxic. It's also much more plentiful than the metal

currently in widespread use, lithium — 8 percent of the Earth's crust vs. 0.006 percent — making it cheaper.

Aluminum also transfers energy more efficiently. Inside a battery, the element — lithium or aluminum — give up some of their electrons, which flow through external wires to power a device. Because of their atomic structure, lithium ions can only provide one electron at a time; aluminum can give three at a time.

"That's the real kicker," Rao said. "That's very beneficial for safer and better batteries."

Still, aluminum ion batteries designed by other researchers have not performed as well as lithium ion batteries.

The Clemson team thinks they know why. In a paper published in journal Nano Energy, they describe how they were able to get aluminum ion to perform better than previously tested aluminum ion batteries.

"The problem isn't that aluminum ions are deficient," said Anthony Childress, a graduate student at the Clemson Nanomaterials Institute and the first author of the Nano Energy paper. "It's that unlike lithium ions that have been around for a while, we do not know much about how aluminum ions behave inside the battery."

The electrode in a battery is like a bucket and the electrical charge is like sand inside the bucket. If the sand starts to flow out, the speed at which it flows is the current. The greater the speed (the larger the current) the quicker the bucket is empty and the sooner the battery goes flat. The more sand you store in the bucket, the longer the current lasts.

Clemson found a way to pack more sand in the bucket and used tools to confirm the bucket was full.

Their new battery technology uses aluminum foil and thin sheets of graphite called few-layer graphene as the electrode to store electrical charge from aluminum ions present in the electrolyte.

"We knew that aluminum ions could be stored inside few-layer graphene," Podila said. "But the ions need to be packed efficiently to increase the battery capacity. The arrangement of aluminum ions inside graphene is critical for better battery performance."

"Previous attempts by other researchers to make high-capacity aluminum batteries were not very successful," said Jingyi Zhu, a recent Clemson graduate.

One explanation for lower performance in other labs could be that cathodes had defects, like holes in the bucket holding sand. When labs tested their batteries, they thought their cathodes were full of ions, but they weren't.

Previous work by the Clemson physicists carefully studied the capacity of few-layer graphene, so they knew what to expect. They also used their expertise in Raman spectroscopy, a method of identifying and measuring molecular signatures, to test their aluminum ion batteries and confirm capacity.

"These aluminum batteries can last more than 10,000 cycles without any performance loss," Podila said. "Our hope is to make aluminum batteries with higher energy to ultimately displace lithium-ion technology."

The next step toward a commercially viable aluminum ion battery is lowering the cost. Although aluminum is relatively inexpensive, the electrolytes are pricey, Rao said.

"This is a new battery with a new and better chemistry, which needs to be fine-tuned for commercial application," Rao said. "We need to make it scalable enough so its cost comes down."