

Bodine Aluminum Receives Special Recognition from American Red Cross

Team Members save 2,583 lives over the course of 11 years



From left, Diane Cockrell, Occupational Health Nurse at Bodine Aluminum; Herman Ridenhour, Manager, Health, Safety & Security at Bodine Aluminum; Wilma McGlothlin, American Red Cross Donor Recruitment Representative; and Ted Simmons, Assistant Manager, Health, Safety & Security at Bodine Aluminum.

On Tuesday, June 19, 2012 members of Bodine Aluminum, Inc. were presented with a special recognition plaque from the American Red Cross for its many years of contribution. Over the course of 11 years, Bodine Team Members have donated 861 units of blood, equating to 2,583 lives saved.

The Bodine Blood Drive is held every year in conjunction with the

company's Safety Month. Team Members are encouraged to participate in Safety Month activities like the blood drive to practice safe habits and ultimately save lives. Other Safety Month activities include a health fair, home safety surveys, safety bingo, a safety lunch and many others. This year's blood drive was a huge success with the donation of 67 units of blood, 23 units over the goal!

The success of this year's blood drive and special recognition by the American Red Cross further highlights a milestone year for Bodine Aluminum. This year marks the 100th anniversary of the company, celebrating a century of quality manufacturing and commitment to the community.

St. Louis Area Men's Chorus Captures Its Third Gold Medal In International Competition



It was the Olympics of a cappella—the biggest a cappella singing competition in the world—and The Ambassadors of Harmony of St. Charles, Missouri won the Gold Medal out of a field of twenty-eight choruses in the 74th Annual International Barbershop Harmony Competition, held at the Rose Garden Arena in Portland, Oregon July 6, 2012. The Chorus Competition was only part of a week-long celebration of a cappella harmony, which also featured 74 barbershop quartets from around the world vying for medals. The week cul-

minated in the Quartet Finals on Saturday night, July 7.

The Ambassadors of Harmony chorus is part of the Central States District of the Barbershop Harmony Society and has over 150 members in ages ranging from 12 to 85. Directed by Dr. Jim Henry, the chorus has placed first in fourteen consecutive Central States District competitions. In previous international competitions, they won Gold Medals in 2004 and 2009 and Silvers in 2007 and 2008. They also have five 5th place and four 4th place Bronze Medals.

Dr. Henry is head of the choral studies department at the University of Missouri – St. Louis. He has a Ph.D. in Music Composition from Washington University, St. Louis, MO, sang bass with the quartet Gas House Gang and currently sings with the quartet Crossroads, who won the Gold Medal in quartet competition in 2009.

See more information at www.aoh.com.

White Rot Fungus Boosts Ethanol Production From Corn Stalks, Cobs & Leaves

Scientists are reporting new evidence that a white rot fungus shows promise in the search for a way to use waste corn stalks, cobs and leaves – rather than corn itself – to produce ethanol to extend supplies of gasoline. Their study on using the fungus to break down the tough cellulose and related material in this so-called "corn stover" to free up sugars for ethanol fermentation appears in the ACS' journal Industrial & Engineering Chemistry Research.

Yebo Li and colleagues explain that corn ethanol supplies are facing a crunch because corn is critical for animal feed and food. They note that the need for new sources of ethanol has shifted attention to using stover, which is the most abundant agricultural residue in the U.S., estimated at 170-256 million tons per year. The challenge is to find a way to break down tough cellulose material in cobs, stalks

and leaves – so that sugars inside can be fermented to ethanol. Previous studies indicated that the microbe *Ceriporiopsis subvermispora*, known as a white rot fungus, showed promise for breaking down the tough plant material prior to treatment with enzymes to release the sugars. To advance that knowledge, they evaluated how well the fungus broke down the different parts of corn stover and improved the sugar yield.

Treating stover with the white rot fungus for one month enabled them to extract up to 30 percent more sugar from the leaves and 50 percent more from the stalks and cobs. Because corn leaves are useful for controlling soil erosion when left in the field, harvesting only the cobs and stalks for ethanol production may make the most sense in terms of sustainable agriculture, the report suggests.

Dark Galaxies of the Early Universe Spotted for the First Time

Dark galaxies are small, gas-rich galaxies in the early Universe that are very inefficient at forming stars. They are predicted by theories of galaxy formation and are thought to be the building blocks of today's bright, star-filled galaxies. Astronomers think that they may have fed large galaxies with much of the gas that later formed into the stars that exist today.

Because they are essentially devoid of stars, these dark galaxies don't emit much light, making them very hard to detect. For years astronomers have been trying to develop new techniques that could confirm the existence of these galaxies. Small absorption dips in the spectra of background sources of light have hinted at their existence. However, this new study marks the first time that such objects have been seen directly.

"Our approach to the problem of detecting a dark galaxy was simply to shine a bright light on it," explains Simon Lilly (ETH Zurich, Switzerland), co-author of the paper. "We searched for the fluorescent glow of the gas in dark galaxies when they are illuminated by the ultraviolet light from a nearby and very bright quasar. The light from the quasar makes the dark galaxies light up in a process similar to how white clothes are illuminated by ultraviolet lamps in a night club." [1]

The team took advantage of the large collecting area and sensitivity of the Very Large Telescope (VLT), and a series of very long exposures, to detect the extremely faint fluorescent glow of the dark galaxies. They used the FORS2 instrument to map a region of the sky around the bright quasar [2] HE 0109-3518, looking for the ultraviolet light that is emitted by hydrogen gas when it is subjected to intense

radiation. Because of the expansion of the Universe, this light is actually observed as a shade of violet by the time it reaches the VLT. [3]

"After several years of attempts to detect fluorescent emission from dark galaxies, our results demonstrate the potential of our method to discover and study these fascinating and previously invisible objects," says Sebastiano Cantalupo (University of California, Santa Cruz), lead author of the study.

The team detected almost 100 gaseous objects which lie within a few million light-years of the quasar. After a careful analysis designed to exclude objects where the emission might be powered by internal star-formation in the galaxies, rather than the light from the quasar, they finally narrowed down their search to 12 objects. These are the most convincing identifications of dark galaxies in the early Universe to date.

The astronomers were also able to determine some of the properties of the dark galaxies. They estimate that the mass of the gas in them is about 1 billion times that of the Sun, typical for gas-rich, low-mass galaxies in the early Universe. They were also able to estimate that the star formation efficiency is suppressed by a factor of more than 100 relative to typical star-forming galaxies found at similar stage in cosmic history. [4]

"Our observations with the VLT have provided evidence for the existence of compact and isolated dark clouds. With this study, we've made a crucial step towards revealing and understanding the obscure early stages of galaxy formation and how galaxies acquired their gas", concludes Sebastiano Cantalupo.