



Bainbridge College Team Shares Wonders of Science Grady 4th Graders Enjoy Hands-on Chemistry Activities

Bainbridge College Assistant Professor of Chemistry Eric Dueno enjoys taking his knowledge on the road to inspire students with the joy of science. His Spring Semester 2010 presentation - with fiery and surprising results - held the rapt attention of Grady County's fourth graders from Eastside, Northside, Shiver, Southside and Whigham elementary schools.

Assisted by BC laboratory coordinators Colette Galivan and Dr. Stephen Gibbs, who holds a Ph.D. in chemical engineering from the University of Wisconsin-Madison, and BC student Andrew Usry of Blakely, Dr. Dueno demonstrated a variety of chemical properties and chemicals reactions.

Students in Lisa Oliver's Exploring Learning Opportunities class at Southside gleefully exclaimed and pointed when "elephant's toothpaste" surged up and out of a glass beaker, making an artful, sudsy sculpture. During the Feb. 10 demonstrations, they jumped when a small amount of isopropyl alcohol fumes



remaining in a five-gallon plastic jug burst into tremendous flame when fire came near it, and again when Dr. Gibbs demonstrated the explosiveness of a hydrogen-filled balloon.



The boys and girls intently studied the tornado-like activity of a chemical clock and commented on its changing colors, they watched the variety of colors as different metals burned, and discovered that the copper content of pennies depends on when they were made. They evaluated changes in



after the pennies soaked in nitric acid. Pennies with high copper content reacted only slightly, but copper-coated pennies changed dramatically, leaving a blue-colored solution. Dr. Dueno neutralized the solution and recovered the pennies for the children to inspect.



Then they had a hands-on opportunity to see how luminol (similar to the chemical that allows fireflies to glow) can detect blood on an item. Reacting to oxygen, luminol gives a purple-white glow. Crime scene investigators use it to detect blood because iron in red blood cells causes the

reaction that produces the glow, explained Ms. Galivan, who holds a master of science degree in forensic drug chemistry from the University of Florida.

Dr. Dueno, who holds a Ph.D. in synthetic organic chemistry from the University of South Florida, has made similar presentations at schools in Bainbridge. The author of more than 30 scientific publications said that he is eager to visit other area schools.



Photo at right shows students watching flames emerge in different colors as a result of the elements that are burning. At left BC student Andrew Usry demonstrates the rapid combustion of gun cotton.