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DuPont and Delaware Department of Education Bring New Chemistry Curriculum to the Classroom

WILMINGTON, DE November 16, 2009 -- Under the sponsorship of DuPont and in collaboration with the Delaware Department of Education, *A Natural Approach to Chemistry* will be introduced into Delaware Public High Schools in the coming school year. The curriculum was developed by Lab-Aids of Ronkonkoma, NY,

In preparation for its debut, *A Natural Approach to Chemistry* workshop will be held for 60 11th grade chemistry teachers throughout the state of Delaware on Nov. 17-20, at the Appoquinimink Training Center, Middletown, Del.

“Chemistry, which is integral to the evolution of DuPont, is used to explain how the natural world builds and renews itself. As humans, we must learn through chemistry how to protect the natural world. This new curriculum will stimulate interest in chemistry and encourage students to study it further,” said George P. Lahm, DuPont Fellow honored for innovations in agriculture and food chemistry.

Traditional chemistry classrooms are not required to teach this course. Fume hoods are not required and open flames are not used. *A Natural Approach to Chemistry* takes a fresh look at how chemistry is used in and out of the laboratory today. Experiments have been developed that allow the program to do quantitative chemistry, using only non-toxic chemicals that can be disposed of easily.

“It is appropriate that we teach chemistry in a natural green environment so that our students can see the wonder of chemistry and its practical application in modern society,” said Secretary of Education Lillian M. Lowery.



The course builds on a foundation of physics and is an ideal follow-up to a ninth grade physics program. Reading and math levels are appropriate for grades 10-12 and the course satisfies high school content standards for chemistry.

Dr. Tom Hsu, a nationally recognized leader in teacher training and an innovator in science equipment and curriculum, is the workshop moderator and developer of *A Natural Approach to Chemistry*. He has authored several programs in physics, chemistry, and physical science for middle and high school science.

Hsu is a strong advocate of hands-on learning. He writes and illustrates his own textbooks and also designs the experiments and apparatus to go with them.

Hsu was nominated for the Goodwin medal for excellence in teaching at MIT. He holds a Ph.D. in applied plasma physics from MIT and an Honors B.S. magna-cum laude from the State University of New York at Stony Brook

A Natural Approach to Chemistry incorporates the “Five-E” learning model (Engage, Explore, Explain, Elaborate, Evaluate). It provides a well-tested structure for the program’s pedagogy. Concepts progress from hands-on observation in the lab (engage, explore), to conceptual understanding of what happened (explain, elaborate), and finally to rigorous quantitative analysis (evaluate).

This approach teaches problem solving and critical thinking skills in a manner that has proven to be far better than the “theory-followed by verification” model used by most traditional chemistry texts.

The labs use a hands-on, guided-inquiry approach to build student understanding. Chapters begin with an exploratory lab which is designed to engage students in the concepts of the chapter. Chapters close with a summative lab, which asks students to put concepts together to explain a more challenging phenomenon, often with quantitative analysis using their own data. Examples throughout the course emphasize the importance of chemistry in the human body, the environment, and in the laboratory.

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