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AMES LAB CHEMIST RECEIVES ACS DISTINGUISHED SERVICE AWARD

Robert Angelici Honored by American Chemical Society for Inorganic Chemistry Work

AMES, Iowa – Robert Angelici, a senior chemist at the U.S. Department of Energy's Ames Laboratory and an Iowa State University Distinguished Professor of chemistry, has been selected by the American Chemical Society to receive the ACS Award for Distinguished Service in the Advancement of Inorganic Chemistry. This award recognizes individuals who have advanced inorganic chemistry by significant service in addition to performance of outstanding research. Activities recognized by the award include such fields as teaching, writing, research and administration.



Angelici is the third Ames Laboratory and ISU researcher to receive the ACS Award for Distinguished Service in the Advancement of Inorganic Chemistry since 2000. James Espenson won the award in 2004, and John Corbett in 2000. The winning of this prestigious award by three Ames Lab/ISU researchers in the last eight years is a remarkable achievement, considering no other national lab or university has had three recipients of the award in the past 30 years.

A creative and productive researcher, Angelici has made substantial contributions to many aspects of the chemistry of the transition metals. He and his research group have used transition metals to stabilize molecules that would otherwise decompose. On the other hand, he has used transition metal complexes to increase the reactivity of otherwise unreactive molecules such as carbon monoxide, thiophenes and various other organic molecules that are present in petroleum. In addition, he has investigated catalytic conversions of petroleum components, as well as fatty acid esters present in biodiesel, to potentially useful commercial products. Some of these studies involved a conceptually new type of catalyst consisting of a metal complex tethered to the surface of silica that also contains a different transition metal.

Angelici is known for pursuing unique and challenging research problems and, in the process, developing fundamental concepts that may be applied to related fields. "I enjoy the thrill of exploring new ideas and directions," he said. "If there's a 'fad' area, I'll avoid it and develop my own direction, and I change directions quite often. It's part of my personality to try something new and different."

The extent of Angelici's impact on inorganic chemistry during his 43-year career is revealed by his more than 370 publications. His current research efforts involve still other applications of transition metals. In one project, he is studying the effects of transition metal binding on the shape and properties of curved carbon surfaces that are fragments of buckminsterfullerene. Another project focuses on the catalytic power of metallic gold, which has long been considered a poor catalyst. He now finds that this metal rapidly catalyzes

reactions of carbon monoxide, amines, and oxygen. The DOE's Office of Science, Basic Energy Sciences Program, Chemical Sciences Division provides funding for both projects.

Angelici has served the ACS Division of Inorganic Chemistry in several offices. He was chair of the Organometallic Subdivision in 1974, initiating the popular Organometallic Social Hours held on Sunday evenings prior to national ACS meetings. He chaired the ACS Division of Inorganic Chemistry in 1985 and has been an ACS tour speaker, bringing the excitement of inorganic chemistry to many local ACS sections. During his vibrant career, Angelici has given over 180 invited lectures at conferences, universities, and industries around the world.

In addition to his outstanding research and service, Angelici has helped advance inorganic chemistry through his dedication to teaching and to his students. During his career, he has served as a major professor and mentor for 44 Ph.D. students, 16 M.S. students and 47 postdoctoral associates. "Every student and postdoc is an individual with different abilities and needs," he said. "Success for each one is different. My role is to try to understand what will help them be successful." The recipient of numerous ISU teaching excellence awards, Angelici has also been recognized by the State of Iowa, receiving the Governor's Science Medal in Science Teaching in 1989.

Committed to helping train new generations of inorganic chemists, Angelici developed an inorganic laboratory textbook, *Synthesis and Technique in Inorganic Chemistry*, which is still used in many colleges and universities around the country. The text, first published in 1969 and now in its third edition, has had "a rather remarkable run," said Angelici.

Thankful for the research "home" that Ames Laboratory has provided throughout his illustrious career, Angelici said, "The continuity of Ames Laboratory's research support has been very important. It has allowed me to do the kind of chemistry I do – to pursue different directions without being locked in. Much of our (group's) best work was done with Ames Lab support."

A remarkable researcher and an inspiring and sensitive teacher, Angelici will receive the ACS Award for Distinguished Service in the Advancement of Inorganic Chemistry at the 2007 ACS National Meeting and Exposition in Chicago in March.

Ames Laboratory is operated for the DOE by ISU. The Lab conducts research into various areas of national concern, including energy resources, high-speed computer design, environmental cleanup and restoration, and the synthesis and study of new materials. More information about Ames Laboratory can be found at www.ameslab.gov.

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