

## University of Alabama at Birmingham – Materials Advantage

The University of Alabama at Birmingham Materials Advantage Student Chapter toured Nucor – Decatur as part of the revised curriculum and the restructuring of MSE 464/564 – Metals and Alloys. Dr. Ron O'Malley along with tour guides John Anderson, Bob Williams, Pat Quiney and Wes Rollings of Nucor-Decatur welcomed eight UAB-MA students to a detailed tour of the plant. Starting with incoming raw materials, students developed an understanding for the sheer volume and scope of the incoming raw materials needed. The operation of the electric-arc furnace shocked students with its dazzling light and sound show as 170 ton heats were melted in 45 minutes. The LMF proved a high point as students were able to see the practical application of steel alloying they had been taught in class. Continuous casting and rolling of the red-hot steel slabs reinforced the simplicity of flow through a modern mini-mill with a tap to coil time of 45 minutes. After the tour, students were treated to a pizza lunch and chatted with Dr. Ron and other Nucor employees. The UAB-MA Student Chapter would like to once again thank Nucor, Dr. Ron O'Malley, John Anderson, Bob Williams, Pat Quiney and Wes Rollings



University of Alabama at Birmingham students outside Nucor –Decatur with Dr. Ron O'Malley

This recent plant tour was due, in part to the efforts of Dr. Alan P. Druschitz (Research Professor) at UAB and the aid of AIST and a FeMET – curriculum development grant. The revamping of the metals and alloys class focused on steel alloying, steel making and steel heat treating. The aim of this effort is to increase student awareness of the steel industry and materials

engineering as a whole. In addition, the recently restructured UAB-Materials Advantage Chapter has instituted numerous recruiting efforts; including demonstrations in metals casting (high school, middle school and incoming freshmen), trips to technical society dinners (AFS), a student designed cupola and free registration for first time members. The efforts of AFS / MA officers has also resulted in the development of a “UAB-Casting in a Box” which contains a silicon rubber mold of the school mascot “Blaze”, a small electric resistance melting pot, low melting point pewter and soapstone molds. This is in an effort to produce a mobile demonstration of metals casting to engage students in materials engineering.



Students learning about metal casting during a “Saturday Academy” of high school seniors.



Student designed and built cupola also demonstrated during “Saturday Academy”