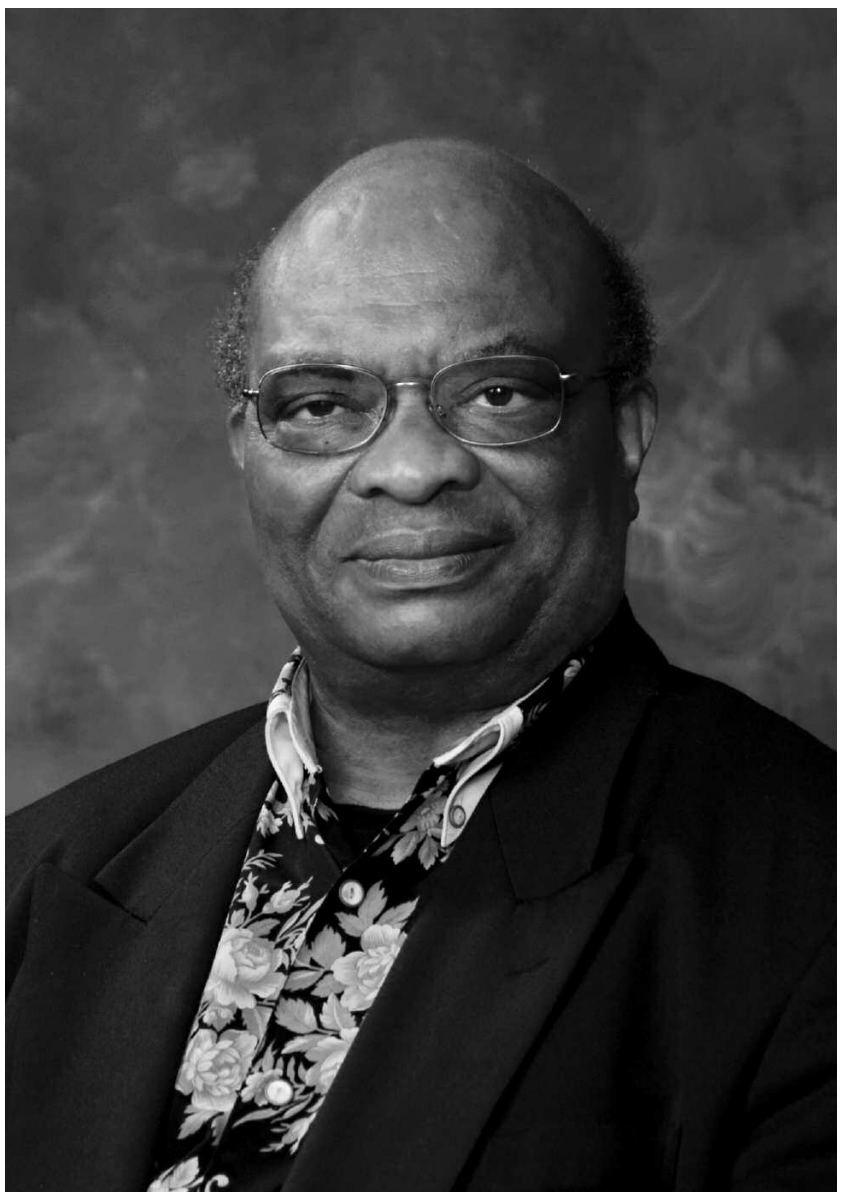

Aderemi Kuku

University of Iowa, Iowa City
and ICTP, Trieste, Italy

Will present the Sixth
Virginia L. Chatelain Memorial Lecture

Title of Talk:

"Continuous Cohomology and Profinite Higher Algebraic K-Theory of Exact Categories, Schemes, and Twisted Laurent Series Rings"

Tuesday, October 2, 2007
2:30 PM
1014 Throckmorton Hall
Kansas State University
Manhattan, Kansas

All are invited

This talk illustrates, among other themes, the benefits of methods of category theory and homological algebra in gaining computational and other insights into apparently different mathematical structures.

After a quick introduction to cohomology theory in Abelian categories, we introduce continuous cohomology and its associated exact sequence useful for computations with examples from algebra (groups), algebraic geometry (schemes), and algebraic topology (CW-complexes)).

Next we introduce exact category and associated Higher Algebraic K-theory with copious examples as well as mod-m and profinite K-theory with associated computation-friendly exact sequences analogous to those earlier obtained.

Finally, we discuss some of the results and computations obtained for higher K-theory and profinite higher K-theory of schemes, group-schemes (e.g., twisted flag varieties), as well as orders and twisted Laurent series rings over orders in semi-simple algebras over number fields, with consequences for group rings of virtually-infinite cyclic groups.

Aderemi Kuku, July 30, 2007