April 7: SPECIAL SEMINAR: Noncommutative algebra, algebraic geometry, Lie groups. Room 2-135. Paul Baum (PSU), "Morita equivalence revisited." Let X be a complex affine variety. Denote the co-ordinate algebra of X by k. A k-algebra is a complex algebra A which is a k-module where the k-module structure and the algebra structure of A are required to be compatible in an evident way. Note that A might not be commutative. We say that A is of finite type if as a k-module A is finitely generated. This talk reviews the definition of Morita equivalence for k-algebras and then introduces a new equivalence relation on k-algebras which is a weakening of Morita equivalence i.e. k-algebras which are Morita equivalent are equivalent in the new equivalence relation, but there are many examples of k-algebras which are not Morita equivalent and are equivalent in the new way. The emphasis will be on k-algebras of finite type. For such algebras the new equivalence relation preserves periodic cyclic homology and the primitive ideal space. Unlike Morita equivalence, the new equivalence relation permits a tearing apart of strata in the primitive ideal space. Examples will be given to show how the new equivalence relation works. Due to basic results of G. Lustzig, the new equivalence relation connects to the representation theory of reductive p-adic groups.