Introduction to non commutative geometry and classification of non commutative spaces

The Gelfand Theorem tells us that a locally compact Hausdorff space corresponds to a commutative C*-algebra. Connes discovered that some topology or geometry objects correspond to non commutative C*-algebras, and therefore can be studied by using those C*-algebras as non commutative spaces. In such context, a simple C*-algebra can be viewed as a non commutative single point space. We will present a classification theorem of unital simple separable C*-algebras with finite nuclear dimension. The talk is based on a joint work with Huaxin Lin and Zhuang Niu and a joint work with George Elliott, Huaxin Lin and Zhuang Niu.

ABOUT THE SPEAKER:

Guihua Gong received his Ph.D. from Stony Brook in 1990 under the direction of Ron Douglas, and has been a full professor at the University of Puerto Rico since 2001. Gong works on operator theory, index theory, and noncommutative geometry. In 2000, he was awarded the Israel Halperin Prize for outstanding work in operator algebras or operator theory.