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The *Eulerian Polynomials* have been introduced by Euler himself back in 1755. The combinatorial meanings of *Eulerian numbers* which are closely related to Eulerian Polynomials have been discovered by Riordan two hundred years later. The definitions and properties of Eulerian polynomials and Eulerian numbers have been thoroughly studied and extended in both directions of analytical number theory and combinatorics. In this talk, we will generalize the definition of Eulerian polynomials and Eulerian numbers to general arithmetic progressions. Under the new definitions, we have been successful in extending many well-known properties of traditional Eulerian polynomials and numbers to the general Eulerian polynomials and numbers. A new combinatorial interpretation will be given to the general Eulerian numbers, and several new combinatorial properties of permutations will be explored. *Keywords:* Eulerian polynomials, Eulerian numbers, triangular arrays, generating functions, combinatorial interpretation. (Received September 21, 2011)