

**Garland E. Allen, Washington University, St. Louis: "*Mechanistic Materialism and the Classical Gene: Scientific and Social Consequences*"**

ABSTRACT: Much has been written in the past twenty years about the evolving use of and meaning attached to the term "gene". During the first half of the twentieth century the "classical gene" came to dominate our understanding and conceptualization of the very process of heredity itself. Genes were portrayed as atomistic units, even when interacting in epistatic relationships, and more frequently the phrase "the gene for . . ." appeared when describing the inheritance of a given phenotypic trait. The fertilized egg was a mosaic of genes and the adult organism a mosaic of traits. While most practicing geneticists knew the picture was more complex, the representation of genes as independent units persisted partly because it fit so well the reigning philosophy of mechanistic materialism in the sciences in general and biology in particular in the first half of the twentieth century. It provided a highly quantitative way to understand hereditary transmission between generations and evolution in populations, even as it excluded embryonic development from its concerns. It also fit well with a variety of social and political trends such as the professionalization of biology (which through genetics could be fashioned in the mould of physics and chemistry), the industrialization of agriculture (where genetic strains could be modified), and with eugenics (where undesirable traits could be eliminated from the population by controlled breeding). This talk will discuss the nature of mechanistic materialism and trace through its effects of the conceptualization of the gene that in many quarters persisted well into the end of the twentieth century.