March 21 Lecture Series
DUNSTON - 2000

James Robinson Johnston Chair
in Black Canadian Studies
Eminent Speakers' Series

March 21st 2000 Public Lecture

The Human Genome: What's 'Race' Got To Do With It? The Implications of Human Genome Research for Minority Health Issues: The Benefits of Genetic Research in Improving Health and Health Care

delivered by

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ABSTRACT

As the awesome technological feat of sequencing the human genome nears completion, the more daunting task of deciphering the genomic text (i.e., the language of life) is just beginning. The emergence of the Human Genome Project at this juncture in the evolution of Western science is not only impacting the way" we view" biology, but also how "we do" biology. Community education in genome science is the most compelling and potentially the most transformative

challenge to 21st century science and society. DNA sequence data coming forth from the Human Genome Project challenges prevailing constructs of human populations, which partition humanity into bounded ethnic and/or racial groups. Because natural variation in the human genome is the ultimate measure of biological relationship, it is a determinant of individual, family, population, and human identity. The Human Genome Project is unique among the leading edge sciences in having as part of its initial core, a component to anticipate and address ethical, legal, and social issues emanating from the advancement of knowledge gained from the science. Because of inherent variation in the genome, the Human Genome Project challenges science to expand, (i.e., make more inclusive) the context or measure of Humanity in order to better understand the content of human biology. The Human Genome Project is forcing a paradigm shift in biology from the phenotype to the genotype, or from an "outside" to an "inside" view of biology and life. The transition from structural genomics to functional genomics focuses less on sequencing and more on understanding the significance of sequence variation. The importance of population variation in the genetic diagnosis, treatment and management of complex diseases cannot be marginalized or ignored. The population that is used as the reference to locate abnormal (i.e., mutations) and natural variation (i.e., polymorphisms) is relevant to the identification and proper application of information emerging from DNA sequence variation. The African American genome is perhaps the most comprehensive single population resource for exploiting DNA sequence variation in the genetic dissection of complex diseases. As medicine becomes increasingly more customized, made-to-order, "designer" medicine, a more refined definition of the individual and population-based disparities in health will be required.