

**Title:** Utilizing Public Policy to Dismantle Poverty

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**ABSTRACT:**

This research *addresses* strengths and weaknesses of theoretical policy models that address poverty. In addition to the unequal distribution of economic resources, poverty is an issue that is difficult to address due to external and unpredictable factors. Using a qualitative *methodology*, five policy making theories and five theories of poverty programs are investigated. The policy making theories are political system theories, group theory, elite theory, institutionalism, and rational choice theory. The five theories of poverty programs are individual deficiencies, cultural belief, political economic deficiencies, geographical disparities, and cumulative and circumstantial origins. The *present analysis suggests* that poverty is a multidimensional issue. Thus, multiple policy-making approaches must be utilized to effectively address factors associated with poverty. Consequently, it is critical that policymakers and government agencies be aware of the demographics and cultures of the people whom they serve, so that fair and equitable policies are developed and implemented. Policy models, which capture these structural and cultural elements, are *recommended* as providing the necessary theoretical underpinnings of analyses of poverty.

**Award: First Place**

**Oral Presentation**

**Graduate Student**

## High-Throughput Screening and Cell-Based Assays to Discover Small Molecules That Overcome Endogenous GTP Inhibition of L-Glutamate Dehydrogenase in Cellular Respiration

Warren E. Bealer III, Qingping He, Jonathan Sexton  
Biomanufacturing Research Institute and Technology Enterprise  
North Carolina Central University

This study serves to discover small molecules that can stimulate fatty acid metabolism for treating type-II diabetes. L-glutamate dehydrogenase (GDH) catalyzes glutamate to alphaketoglutarate (AKG), that feeds into the citric acid cycle. When excess food intake occurs, GDH is inhibited by GTP, ATP and palmitoyl-CoA, slowing the synthesis of AKG. Overcoming endogenous GDH inhibition can have therapeutic benefits including stimulating fatty acid oxidation and basal insulin secretion. This research began with designing a kinetic assay to detect the reversal of inhibition of the GDH enzyme as done by the body when converting fatty acids to glucose. Once this was accomplished, the assay was miniaturized and automated for high-throughput small molecule screening in 384-well microtiter dishes to discover potential GDH activators. To start, plates are loaded with a buffer solution containing L-Glutamate, NADH and +/-GTP (no GTP for control wells), then test compounds or dimethyl sulfoxide (DMSO) as the vehicle control. Next, a buffer solution containing GDH is applied to all wells and it is immediately read on a BMG Pherastar fluorospectrometer at 30-second intervals for five minutes to detect NADH, an enzyme reaction product. Compounds increasing the rate of NADH formation are selected and confirmed and will be used in a cell-based assay to determine effects on cellular respiration. Any molecules showing desired results will be considered for future animal studies to determine efficacy in treating type-II diabetes. Should this prove successful, this will provide a novel approach to treating people with diabetes.

Award: First Place  
Oral Presentation  
Undergraduate Student

## **Black Basketball: The McLendon Years at North Carolina College for Negroes, 1937-1952**

Raja Rahim and Jim Harper

Department of History, North Carolina Central University

This study seeks to provide a historical examination and analysis of the grassroots civil rights efforts of John B. McLendon Jr. and how he used basketball to push for integration of the gymnasium highlighting the social and political impact of black basketball in Durham, North Carolina. McLendon spent fifteen years as the head basketball coach at North Carolina College for Negroes in Durham. McLendon created the defensive and offensive techniques to modernize the game of basketball. In addition, it is the intent of this research is to illustrate how John B. McLendon used the game of basketball to confront racial barriers and integrate the basketball court. By 1954, the political and social climate in America was intense and the Supreme Court case *Brown v the Board of Education of Topeka, Kansas* declared that “separate but equal” was unconstitutional. Ten years prior to this landmark decision, McLendon orchestrated an integrated basketball game that was unknown to history until fifty-two years later in 1996. Known as the “Secret Game,” historian Scott Ellsworth conducted a creditable investigation to piece together missing pieces of history. Current sources on McLendon do not focus exclusively on McLendon’s tenure at NCC.

**Award: Third Place**

**Oral Presentation**

**Graduate Student**