

SUMMARY STATEMENT
(Privileged Communication)

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Application Number: 1 R03 HD048609-01A1

Principal Investigator

DORN, SHERMAN J PHD, UNIVERSITY OF SOUTH FLORIDA

Review Group: CHHD-W
Population Sciences Subcommittee

Meeting Date: 06/15/2006 *RFA/PA:* PA03-108
Council: OCT 2006 *PCC:* DBS -RC
Requested Start: 01/01/2007

Project Title: Indirect Measures of Student Net Flow and Attainment

SRG Action: Priority Score: 221 Percentile: 41.6 #
Human Subjects: 10-No human subjects involved
Animal Subjects: 10-No live vertebrate animals involved for competing appl.

Project Year	Direct Costs Requested	Estimated Total Cost
1	50,000	72,500
2	50,000	72,500
<hr/> TOTAL	<hr/> 100,000	<hr/> 145,000

ADMINISTRATIVE BUDGET NOTE: The budget shown is the requested budget and has not been adjusted to reflect any recommendations made by reviewers. If an award is planned, the costs will be calculated by Institute grants management staff based on the recommendations outlined below in the COMMITTEE BUDGET RECOMMENDATIONS section.

NEW INVESTIGATOR

RESUME AND SUMMARY OF DISCUSSION: This amended R03 application submitted by Dr. Sherman Dorn from the University of Florida is in response to the NIH Small Grants Program (PA-03-108) announcement. The applicant proposes to develop and test semi-parametric models of demography to indirectly measure aspects of student net flow in a particular district. The primary strengths of this application continues to be the approach posed for assessing student net flow including its modest improvement over existing measures; the potential for the proposed approach to reduce bias in assessing student flow; the policy relevance of this study; its potential to contribute to the debate on high-stakes testing that allows for comparisons across districts; the experience and expertise of the applicant in research related to school dropout; and the adequacy of the research environment to support the study. Additional strengths include the application of the variable “r” technique to the assessment of educational participation and attainment that’s innovative; the extension of the proposed model to various contexts of differential migration that allows for the integration of different sources of educational data; and the clear and detailed info provided on the formula proposed that highlights preliminary calculations for historic and contemporary circumstances. Nevertheless, several weaknesses are noted that significantly dampened the enthusiasm for the application. The primary weaknesses include concerns about some measures not being well articulated such as the lack of clarity on what can be measured and what is assumed; questions about potential problems associated with the measurement of population mobility; and insufficient justification given to the notion that the variable “r” method will yield a more robust estimate of school enrollment and educational attainment than other methods. Overall, the reviewers agreed that the significance of the topic posed and the potential for this technique to advance knowledge about spatial differences in educational attainment contributed to their decision to recommend it for further consideration at a “very good” level of enthusiasm.

DESCRIPTION (provided by applicant): The proposed project will develop and test indirect methods of measuring student flow in and out of schools in individual grades and other measures of attainment. This measure will advance educational research methods, will expand applications of demography, will answer a historical question about the expansion of attainment by African American students in the U.S. South in the mid-20th century, and will contribute to a broad public debate over the distribution of students within a district by socioeconomic status and race/ethnicity. The proposed project applies Preston & Coale's variable-rate population models to estimate the characteristics of student populations. The proposed methods allow for an estimation of school system characteristics as synthetic period measures, year by year, so information about the potential effects of policies are available before a grade cohort has finished its K-12 career. Additional benefits lie in expanding the application of demographic methods to areas that thus far have not been accessible to demographers, creating a semi-parametric application of demography. This project will test this method with data on one historical population—public-school students in Georgia between 1937 and 1965—and two contemporary populations—early-21st century records from Texas and Florida.

CRITIQUE NOTE: The sections that follow are the essentially unedited, verbatim comments of the reviewers assigned to this application. They are provided to illustrate the range of opinions expressed. The application was discussed and scored by all reviewers present. The attached commentaries may not necessarily reflect the position of the reviewers at the close of group discussion, nor the final majority opinion of the group. The Resume and Summary of Discussion, however, is the authoritative representation of the final outcome of the group discussion.

CRITIQUE 1:

SIGNIFICANCE: Educational data are fairly easy to collect, in the sense that school children are captive populations who are comparatively well administered. But these data are almost always sets of counts, while we are often interested in rates; and it is not always easy to get good rates for education data because denominators (exposures) are less evident. It is also difficult to separate the “good” forms of decrement (promotion, graduation) from the “bad” forms (grade retention, drop-out), especially

because there is much in the way of “neutral” decrement (migration). Because of the importance of human capital, the stock of education is an important focus of public and educational policy, and a determinant of the social, economic, and health well being of the population.

APPROACH: The application adapts the “variable r ” approach to the education context. For example, counts of children in school by age are period-specific populations. Comparisons of age-specific growth rates reflect changes in the initial size of cohorts, but also a lot of other things such as differential migration, dropout, and so on. These forms of decrement are specific “causes,” by analogy to cause of death. The strength of the proposal is that the model does provide a unifying framework for integrating data from various sources to turn out standardized measures for periods (synthetic cohorts). The weakness of the proposal is that the important measures (estimands) are not well articulated, so it is not clear why some of the life-table-like measures that can be derived from this approach conform to the ideal measures one would like to obtain. For example, why not focus on measures for actual, as opposed to synthetic cohorts? An answer semi-explicit in the application is that the synthetic cohort methods do not require one to wait until a cohort has completed its youth in order to use all contemporary available data. But it might help to think about the relationship between cohort and period measures in this context. Also, it is not always clear what can be measured and what must be assumed. This is especially true with respect to migration. Why, for example, should one think that the migration rates of 7-10 year-olds obtain with respect to teenagers? Analyses of local migration often show a great deal of variability by age among youth.

INNOVATION: The extension of the variable- r framework to the demography of education is innovative and non-trivial, especially given the multiple sources of decrement (and increment) within education. The application’s novelty probably lies more in what can be achieved in the synthesis of educational data than in the proposed substantive analyses. The application probably would have been strengthened if it were restricted to the demographic synthesis, with the data being illustrative of the forms of organization of such educational information.

INVESTIGATORS: The PI, Dorn, is an associate professor in the School of Education at the University of South Florida. His Ph.D. is in History and he has an M. A. in Demography. He has published extensively in the schooling and enrollment literatures. He appears to have the demographic skills to do the research as proposed.

ENVIRONMENT: This type of research makes little demand on institutional resources. It might be nice if the PI were surrounded by colleagues for whom these methods are of interest; but, in the age of the Internet, this is not an insuperable problem.

OVERALL EVALUATION: This is a revision of an application to use the general demographic accounting model for non-stable populations (“variable r ”) as a framework for the measurement of the demography of educational participation and attainment in open population units (e.g., counties). This model provides a useful framework for integrating disparate sources of educational data, including age-specific enrollment counts and numbers of graduates by age. The substance of the proposed analysis involves the assessment of spatial differences in educational attainment and graduation within several southern U.S. states.

BUDGET: The budget is appropriate.

PROTECTION OF HUMAN SUBJECTS FROM RESEARCH RISKS: These data are mostly administrative counts, although there is one confusing line about individual records in Florida that are tabulated, where it is not clear whether the PI will have access to the individual records or to the tabulations. The individual records, by the way, could conceivably be of value for calculating direct incidence measures.

GENDER/MINORITY/CHILDREN INCLUSION: The data cover males and females, most of whom are children.

CRITIQUE 2:

SIGNIFICANCE: The overall significance of the topic under investigation, school attendance and discontinuation, is appreciable. This topic is of considerable concern at all times, but the various constraints and incentives now introduced by new legislation (No Child Left Behind) have shifted the landscape. While the topic is significant, the application fails to articulate a compelling argument that the application of variable r techniques will offer a superior window on school continuation to approaches currently available using administrative and other population data.

APPROACH: The investigator and team would extend the variable “ r ” techniques developed by Preston and Coale in the early 1980s (and extended somewhat since) to the case of school enrollment. It would seem that this is a new application of this technique in formal demography. The text lays out fairly clearly the formulae that would be used, and it shows preliminary calculations for a historical circumstance (Georgia 1930s) and a contemporary circumstance (Texas 2000s). The investigator clearly demonstrates that he is able to apply these procedures to the data at hand.

While the investigator notes the issue of migration, the application seems to underappreciate the potential problems the population mobility introduces. The original Preston-Coale formulation was applied to mostly larger populations where migration was fairly limited as a component of population change. With school districts (even states), however, migration is a potentially large component of change. The investigator’s own illustrative example acknowledges that annualized net in-migration is “improbably high and requires data quality checks.” Considerably more work would need to be done to make a convincing case that the variable r approach would yield more robust estimates of school enrollment and graduation than other methods under consideration.

INNOVATION: The application of this technique – while established in the field for about 25 years – to the case of school enrollment could be considered innovative.

INVESTIGATORS: Dr Dorn is a 1992 PhD in History with an MA in demography (Both U Penn). The training, the exposition of the application, and Dr. Dorn’s experience indicate he is fully conversant with the methods described here. Dr. Dorn’s publication list indicates that he is a leading figure in the scholarly and policy discussion of educational attainment. He is fully qualified to carry out this work.

ENVIRONMENT: The University of South Florida provides an acceptable environment for the research.

OVERALL EVALUATION: The project addresses an underlying problem of considerable importance. The application could have done much more to articulate the advantages of the proposed technique over other contemporary approaches to the enrollment/graduation issues.

PROTECTION OF HUMAN SUBJECTS FROM RESEARCH RISKS: Extant administrative data will be used in this research. It appears that with identifying information removed, the applicant is correct that the project can claim exempt status.

INCLUSION OF WOMEN AND CHILDREN IN RESEARCH: Children will be the focus of the work (K-12) and both sexes will be included.

INCLUSION OF MINORITIES IN RESEARCH: The project should be representative of the ethnic distribution of the states (Florida, Texas, Georgia) from that the data come.

THE FOLLOWING RESUME SECTIONS WERE PREPARED BY THE SCIENTIFIC REVIEW ADMINISTRATOR TO SUMMARIZE THE OUTCOME OF DISCUSSIONS OF THE REVIEW COMMITTEE ON THE FOLLOWING ISSUES:

COMMITTEE BUDGET RECOMMENDATIONS: The budget was recommended as requested.

Ad hoc or special section application percentiled against "Total CSR" base.

NOTICE: The NIH has modified its policy regarding the receipt of amended applications. Detailed information can be found by accessing the following URL address:
<http://grants.nih.gov/grants/policy/amendedapps.htm>

NIH announced implementation of Modular Research Grants in the December 18, 1998 issue of the NIH Guide to Grants and Contracts. The main feature of this concept is that grant applications (R01, R03, R21, R15) will request direct costs in \$25,000 modules, without budget detail for individual categories. Further information can be obtained from the Modular Grants Web site at <http://grants.nih.gov/grants/funding/modular/modular.htm>

MEETING ROSTER

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NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT
CHHD-W
June 15, 2006 - June 16, 2006**

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* Temporary Member. For grant applications, temporary members may participate in the entire meeting or may review only selected applications as needed.

Consultants are required to absent themselves from the room during the review of any application if their presence would constitute or appear to constitute a conflict of interest.