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## ABSTRACT

The 6-week summer institute program provided 56 high achieving secondary school students with exposure to the social science disciplines. The major objectives of the training program were as follows: 1) to provide a combination of unique social experiences to high ability students which would be sufficiently challenging to motivate them toward commitment to advanced training and careers in the social sciences; 2) to introduce students to the scientific process as applied to social science investigation; and 3) to provide students the opportunity to engage in an independent research project. Guest lecturers discussed their own research findings during the initial two week segment and provided the students with the foundations of social science methodology. During the second 2-week segment, students were offered their choice of five of seven modules, each 3 days in length, in political science, sociology, and psychology. Attempts were made by the instructor in each module to illustrate the application of social science methods to the various substantive areas. Several field trips were also taken during this time. The final two weeks of the institute were spent on individual research with staff supervision and assistance. Evaluations showed that the concept of the Institute was useful and that the program was successful in meeting its objectives.

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FINAL REPORT

Summer Institute in Social Science Methodology:

Sociology, Psychology and Political Science

for

High Ability High School Students

Supported by

NATIONAL SCIENCE FOUNDATION

Student Oriented Program

Student Science Training Program

and Conducted by

Department of Sociology-Anthropology

Illinois State University, Normal, Ill.

June 13 - July 25, 1973

Project Director: Dr. David C. Eaton

Contract NSF GW - 8213

Proposal No. 3/1493

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### Summary Statistics

Number of participants	56*
Number of inquiries	345
Number of completed applications	160
Number of first choice invitations sent	65
Number of first choice student attending	<u>56</u>
Number of alternates attending	1

\*One student received permission to return home at the end of the first week of the Institute.

### Director

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### Graduate Assistants

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Robert C. Maple, Political Science  
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Hampshire High  
Hampshire, Illinois

Joel Barlow High  
Route 53  
Redding, Connecticut

Grafton, High  
Grafton, Wisconsin

Atlantic High  
Oak Hill, Virginia

Maine North  
9511 Harrison Street  
Des Plaines, IL 60016

Benjamin Bosse High  
1300 Washington  
Evansville, IN 47714

Sunnyvale High  
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Sunnyvale, CA 94086

Blackfoot High  
870 Fisher  
Blackfoot, ID 83221

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High School Address

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29 Fort Greene Place  
Brooklyn, New York

Thomas Jefferson  
2200 Jefferson Drive  
Port Arthur, Texas

Raritan High  
419 Middle Road  
Hazlet, New Jersey

Thomas Jefferson  
2200 Jefferson Drive  
Port Arthur, Texas

Ridgefield High  
North Salem Road  
Ridgefield, CT 06877

Lower Moreland  
555 Red Lion Road  
Huntington Valley, PA

Sheepshead Boy High  
Avenue X  
Brooklyn, New York

Gonzaga College High  
19 I Street, N.W.  
Washington, D.C.

Nitro High  
21st Street  
Nitro, West Virginia

Thousand Oaks High  
2323 Moorpark Road  
Thousand Oaks, CA 91360

Immaculate Heart High  
5515 Franklin Avenue  
Los Angeles, California

L. E. Dierciff High  
Irving & East Washington Strs.  
Allentown, PA 18102

Benson High  
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Participant Listing: (Continued)

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Mortensen, Katrina  
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Blackfoot, ID 83221

High School Address

Lenape High School  
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Medford, New Jersey

The Buckingham School  
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Cambridge, Massachusetts

Prospect High  
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Saratoga, California

Northern Garrent Jr:Sr High  
Accident, MD 21520

Misawa Dependents High  
Misawa Air Base  
Japan 96519

Wausau West High  
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Wausau, WI 54401

Niles North  
9800 Lawler  
Skokie, IL 60076

Forest View High  
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Arlington Heights, Illinois

Campion High  
Prairie du Chien, WI 53821

Alhambra High  
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High School Address

Parsons Senior High  
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Boise High  
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Boise, Idaho

Batavia High  
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Batavia, OH 45103

Bloomington High North  
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Bloomington, Indiana

Mount Morris High  
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Mt. Morris, IL 61054

Everglades School for Girls  
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Miami, Florida

Huron High  
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Chambersburg High  
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High School Address

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Levelland High  
Levelland, TX 79336

Niles Township-North  
9800 Lawler Avenue  
Skokie, IL 60076

Rauten High  
419 Middle Road  
Hazlet, NJ 07730

Kickapoo High  
3710 South Patton  
Springfield, MO 65804

## PROJECT DESCRIPTION

### Program Announcements

Program Announcements were prepared during January, 1973 and mailed to the bulk mailing addresses about mid February. Announcements to be posted, and an accompanying memo and application forms were sent to high school Social Studies Department Chairmen in all Illinois High Schools, and to High Schools which produced National Merit Semi-Finalists in 1972 in the surrounding States of the mid-West--Indiana, Wisconsin, Michigan, Missouri and Iowa. In addition, of course, we handled mailings to persons who read the program description in the NSF announcement and wrote for further information. These individual requests amounted to about 350 requests. It is difficult for me to estimate to what extent our mass mailing was productive, although it is my impression that the greatest response came from the NSF announcement.

### Recruitment and Selection of Participants

We asked for a \$25 deposit with completed applications--a procedure which we felt would prevent a rash of non-serious applicants from complicating the selection procedure. We waived the deposit requirement for a number of students who indicated that they would be unable to apply otherwise. Materials which we requested and used in the evaluation and selection process were high school academic record, PSAT scores (whenever available), student statements about why he wanted to apply, and letters of recommendation from one or more high school social science teachers. Three staff members used a rating sheet to rate each of the 160 completed applications. Selectivity was possible because of the large number of qualified applicants. We used a figure of 65 acceptances to fill the 45 places approved for the program. This figure was used on the basis of NSF experience and that of other program directors on the rate of student acceptance of offers to be participants. Offers of scholarship assistants were determined on the basis of availability and expressed need on the NSF Student Application.

### Acceptance Rate

For a variety of reasons, our rate of student acceptances were extremely high. Fifty-seven out of 65 accepted positions in the program (88%) although later one decided to go to Europe instead and another dropped out of the Institute at the end of the first week. My explanation is that we had already narrowed to persons seriously interested in social science and this particular project. Secondly, we were the only residential project dealing directly with social science, and Third, there was the possibility for obtaining credit for the Institute, apparently not true in most of the other projects.

### Scholarships Offered

Scholarship assistance was offered to a total of 36 of the 65 persons to whom we sent acceptances. Of these, seven of the persons to whom we had made scholarship offers declined to come. This freed up additional support for transportation subsidy which was offered at only a minimal basis initially. The range of scholarship support offered was from \$50 to \$270 out of a total

cost to students of \$310. The average scholarship assistance received by students receiving assistance was about \$150. We followed the statement from NSF that "elaborate means of determining need was usually unnecessary" and used simply the statement regarding how much of the total cost the student could bear, and then took into consideration any additional support statement the student, parent or teacher made. After students were here, it was my observation that this may not have been good, and some students who clearly could have gotten by without support had received it. Of course, I had no basis for withholding support from students after it had been offered, no matter how much money they spent on purchasing records and other non-essential items. I don't really have a solution to this problem, but I did have some students complain that other participants had asked for and gotten considerable support while they felt they needed it as much or more.

### Format of the Program

The institute was held a period of six weeks, from Wednesday, June 13, to Wednesday, July 25, 1973. The six week program provided the participants with exposure to social science methodology, research findings of the social science disciplines of psychology, political science, sociology, and an opportunity to conduct or propose a social science research project.

The initial two week segment provided the students with the foundations of social science methodology, including elements of philosophy of science, use of concepts and hypotheses, collection and analysis purposes. Guest lecturers Hassan, Walsh and Williams discussed their own research findings in an attempt to illustrate the diversity of subject matter which is unified through the use of the scientific method.

During the second two week segment, students were offered their choice of five of seven modules, each 3 days in length, in political science, sociology, and psychology. Attempts were made by the instructor in each module to illustrate the application of social science methods to the various substantive areas. Relevant theoretical materials and research findings were presented to provide the students with a fuller understanding of alternatives for their own research projects. Several field trips were taken during this two week period. The field trip to Chicago, Illinois consisted of a visit to NORC, the Regenstein Library at the University of Chicago and the Museum of Science and Industry. A field trip to Dixon Mounds, New Salem and Springfield afforded the opportunity of seeing an archeological museum, the state capital.

The final two weeks of the institute were spent on individual research with staff supervision and assistance and considerable student initiative. Students met in small groups to present initial drafts of their projects and to offer constructive criticism of their classmates' proposals. The culmination of this two week segment consisted of a "mini-professional" meeting. Student papers were selected for presentation and critique before the entire group. Students who successfully met course requirements were awarded letter grades and six semester hours of college credit which will be held in escrow until high school graduation. This was made possible through the Credit in Escrow plan at Illinois State.

### Institute Objectives

The major objectives of the training program in Social Science Methodology for high school students were:

- to provide a combination of fairly unique social science experiences to high ability high school students which would be sufficiently challenging to motivate them toward commitment to advanced training and careers in the social sciences;
- to provide participants with an introduction to the scientific process as applied to social science investigation;
- to expose participants to selected substance and research approaches in three social sciences: sociology, psychology and political science, and to involve them in thinking and applying social science in these general areas;
- to provide participants the opportunity to engage in a limited independent research project under the guidance of a university research social scientist and graduate assistant.

The content of the summer training program in Social Science Methodology was intended to present a social science framework which emphasizes the process of interaction between theory and methodology. Unlike the average high school social studies class in which rote-memory learning is rewarded and reinforced, it was the objective of this institute's staff to promote and stimulate higher levels of cognitive learning. Within this framework, it was felt that exposure to substantive areas within the disciplines of sociology, political science and psychology should provide opportunities to examine the commonalities as well as the differences in the application of social science methodology to each field. The opportunity for participants to engage in a simple research project of his/her choosing, under the guidance of a university social scientist and graduate assistant, was intended to provide each student with an exposure to the excitement as well as the problem-solving involved in social science research.

In summary, the early experiences in social studies most young people have in both elementary and secondary school courses, and their first exposure to specific social sciences in large lecture courses in college, frequently fail to challenge their imaginations or capabilities. The objectives of this program were to offer experiences which would acquaint students with the potentialities of social science and thereby attract high ability students to further study and careers in the social science disciplines.

### The Academic Program

The social science program was divided into three major interrelated segments. The instructional staff, consisting of three Illinois State

University faculty and four graduate assistants, were involved the entire program to insure continuity.

- (1) Introduction to Social Science Methodology (2 weeks)
- (2) Modules in Social Science (2 weeks)
- (3) Independent Research Project (2 weeks)

Other major aspects of the program were:

- (4) Social Science Seminar
- (5) Computer Workshops
- (6) Field Trips (2)
- (7) Simsoc (Game) Experience

A typical daily schedule consisted of:

Breakfast	7:00 - 7:45
Class Session I	8:00 - 8:50
II	9:00 - 9:50
III	10:30 - 11:20
Lunch	11:30 - 12:50
Workshop	1:00 - 3:00
Dinner	4:45 - 6:00
Evening Session	7:00 - 9:00

#### I. Introduction to Social Science Methodology

Materials used: Forcese, Dennis P., and Richer, Stephen.  
Social Research Methods. Prentice-Hall, 1973.

Research Manual. Adapted from Riley, Matilda.  
Sociological Research. Harcourt, Brace & World, 1963.

The original proposal had called for an eight-week program. We found that we could accomplish our major original objectives in the shorter six-week period, but we were very "pushed" all the time. The general strategy outlined in the original proposal was retained. Dr. Jeral Williams, Psychology, who had been designated as a full-time faculty member in the proposal was unable to participate on the Staff because of the reduction in salary associated with a six- rather than eight-week program. During this initial period of lecture, discussion and work-shop on Social Science Methodology, participants received a total of 18 hours of computer instruction and had laboratory time for actual computer use.

#### II. Modules in the Social Sciences

In the original proposal, these were to be full week sessions, to provide concentrated work in sociology, psychology and political science. Instead, seven modules were offered; each student chose four in order of preference. Three days (a total of 15 instructional hours) were allotted for each module. The modules offered to participants are listed below:

- (1) Experimental Psychology
- (2) Corrections/Deviance
- (3) Ethnic/Stratification
- (4) Census/Poll Use
- (5) Sociology of Education
- (6) Electoral Behavior
- (7) Political Development

A variety of learning experiences were planned by the instructional staff. Examples of some of these activities were: (a) use of the computer in analyzing political development among Third World nations; (b) creation of an ideal school system; (c) role-playing ethnic relationships; (d) evaluation of a questionnaire in corrections; (e) analysis of voting behavior through computer use; (f) use of NORC data, general survey, 1972. A maximum of fifteen students participated in a modular session. Some modules were scheduled as few as two times while others met each of the 4 three-day sessions. A brief description of each module follows:

#### DESCRIPTION OF SOCIAL SCIENCE MODULES

##### Experimental Psychology/Behavior Modification: Tom Nelson

This module will focus on an operant conditioning sequence in which basic principles of conditioning will be applied in the training of an animal in an experimental situation. The experiments will involve the following types of situations: (1) development of a useful and efficient reinforcer, (2) simple operant conditioning, (3) discrimination training, (4) chaining of responses, (5) development of resistance to extinction.

##### Corrections/Deviant Behavior: William Tolone

This module will consider two topics: (1) the prison as a social system, and (2) the study of deviant behavior as a function of the ways in which people "neutralize" their actions. In the former (prison as a social system), reference will be made to previous research on prisons and their inmates. In the latter ("neutralization"), some ongoing research will be considered as well as the theoretical/empirical sources of this research.

##### Ethnic Relations and Stratification: David Onuma

This module will concentrate efforts on four major topics: (1) Intergroup relations, (2) Stratification, (3) Prejudice, (4) The interaction among prejudice, stratification and ethnicity as they relate to implications for social change. Particular topics for discussion include: marginality, ethnic identification, mobility, social classes in society, the social psychology of prejudice, and prediction of future ethnic relations.

Electorial Behavior and Political Processes: Bob Maples

In this module the student will be involved in the political process of electoral behavior or analysis of voters. The class will make use of computer services and the card sorter to aid in the selection of sample data and tabulations to predict, analyze and describe social characteristics and their relationship to voting. Participants will be using data collected by polling techniques and each student will work with a deck of cards containing questionnaire data. The focus will be mainly on presidential elections with emphasis on 1945-1968.

Political Development Studies: Joel Verner

This module will concern itself with (1) definitions of the concept of development in "developing countries" (primarily in Latin America), (2) methods that have been used to operationalize various aspects of the concept "development" (3) particular studies of the conditions of development in the "third world" countries, and (4) the substantive findings of these studies. Typical questions to be dealt with are: (1) What socio-economic-psychological conditions are associated with "developed" or "underdeveloped" countries? (2) Does communism or capitalism represent the most prominent developmental path? (3) Is violence necessary for development? (4) Does U.S. foreign aid yield developmental results?

Sociology of Education: Mary Howrey

The objective of this module is to provide an overview of the U.S. educational system, its major functions, processes and dilemmas. Particular attention will be devoted to micro-level processes occurring in the class room (e.g., teacher-student interaction, adolescent subculture, implications of self-concept theory, the use of standardized IQ tests and their effects on teacher expectations and their importance in affecting one's life chances). Larger educational system concepts and policy issues will be examined and discussed--norms, roles, the use of tracking, graded vs. non-graded learning alternatives, teacher unionization-professionalism, the bureaucratization of school districts and the relationship of educational to occupational structures. This analysis of educational social system concepts and policies will culminate in the formation of an ideal-type school system by each of the participants requiring use of sociological concepts and creative thinking.

Use of Census and National Poll Data: David Eaton

This module will involve looking at the types of knowledge which have been gained by use of large scale censuses, and representative stratified surveys of the population. It will focus on differences between using demographic and social-psychological variables in research. Actual data of both U.S. Census 1970, and NORC 1972 Survey will be available for use by participants to test their hypotheses.



### III. Independent Research Project

Students selected one of four staff teams, composed of a faculty member and graduate teaching assistant, to assist them with their proposal or research projects. Feedback on their projects was provided by the staff team and their fellow students. Extensive use of Milner Library was made in gathering relevant theoretical and empirical literature.

The range of research topics and varying social science methods approaches employed by the participants is illustrated in the attached abstracts of the research topics presented in the final day's conference, the program is shown below.

#### PROGRAM

Session I Moderator: Dennis Drake Wednesday, July 25, 1973, 9-10:20 a.m.

Paper I by B. Collins Naylor, Boise, Idaho Discussant: Karen Yates

#### The Effect of Presence of Music on Test Performance Ability

The purpose of this study was to observe the effect that the presence of music had on a student's test performing ability. A Study by N. Cameron in 1947 demonstrated that university students were oblivious to background noises while performing experimental tasks in a laboratory. Kestenbaum and Weimer in 1970 found that performance on a standardized reading test was negatively related to exam anxiety. It is from these sources that the two variables, presence of music and test performance ability in relation to subject's anxiety, are derived. They are analyzed in the classical independent-dependent manner respectively. Classical music is introduced into an environment while subjects are taking an American Government exam. Subjects are to be selected so as to represent diversified grade point average, anxiety level (as measured by the Alpert-Haber Achievement Anxiety Test), and sex. They will exist with a matched counterpart that will take the same exam in a controlled environment; that to which they are most normally accustomed to. The results of the exam are to be compared with respect of the experimental to the control. Results should show that the presence of music enabled the subject to 'narrow his attention' and lower debilitating anxiety so that he can show his ability on the exam; and that this score would be higher than that of his counterpart in the control group. Anova can be used to measure significance of difference in the mean results. Future studies can observe reactions to different types of music as they are played.

Paper II by Emily Morris, New Milford, N.J. Discussant: Mike Sauter

#### A Content Study of Depression Films

The problem concerned dealt with the type of movies released during the period containing the American Depression (1927-1941), to discover if there were any trends in character depiction and plot content which would reflect the economic status of the country. In order to operationalize this, I randomly picked 1,400 New York Film Critics Reviews during these years and

catagorized them according to "light" and "heavy;" "light" being basically comedies and musicals, and "heavy" being all other types. The percents of light movies from each year were placed upon a graph which was compared to a graph of the American unemployment rates for the same years. The unemployment rates were used as a measure of the intensity of the depression. My hypothesis stated that there was a direct correlation between the percent of light movies and the percent of unemployment over a period of time. My data was supportive of this relationship. Knowing trends such as this may lead to draw more general conclusions in the area of mass media and human behavior.

Paper III by Jan Rose, Miami Beach, Florida      Discussant: Mary Bidinger

A Proposed Study on the Effectiveness of Graded and  
Nongraded Elementary Schooling on Pupil Achievement

The purpose of this proposal is to determine whether students in a non-graded atmosphere can attain a higher level of academic achievement than students in a graded system. Previous studies have been inconclusive; for this reason teacher behavior will be controlled. This research will involve testing two hypotheses: (1) A nongraded school system promotes higher academic achievement than does a graded school system; (2) teacher behavior influences the effectiveness of the nongraded school system over that of the graded school system. The subjects investigated will be an availability sample of second graders. Two experiments, both involving a control (graded) and experimental (nongraded) groups were proposed. In the second experiment, teachers' behavior will be controlled by exposing them to sensitivity training the summer before the new school year. Achievement will be measured by administering pretests and post-tests of the Wide Range Achievement Tests. Teachers will be observed in both experiments (using various techniques including Flander's analysis). Expected results to support both hypotheses would show not only a higher mean achievement of the nongraded group, as in hypothesis one, but a higher mean achievement in that group after controlling teacher behavior. Perhaps through this proposal, an effective grading system can be established to meet the needs of students.

Session II      Moderator: Janice Shack      Wednesday July 25, 1973, 10:40-12 noon

Paper I by Bruce Beatus, Floral Park, New York      Discussant: David Wersan

The Interrelationships of Family, Educational, Occupational  
Economic and Ideological Characteristics and Attitudes to Watergate

The basic purpose of this study is to investigate the association between one's attitudes towards Watergate and the variables which shape one's political thinking. Chesler and Schmuck (1964) in their study of student reactions to the Cuban missile crisis found that parents of students who had different attitudes and values differed in educational, economic and occupational characteristics. The dependent variable is attitudes toward Watergate while the independent variables are party affiliation, occupation, social status, and conservatism-liberalism. Background data on sex, race, and age will be collected to be used as controls in later analysis. Data will be collected through use of a 35-item self-administered questionnaire. Conservatism-liberalism will be measured using the Political-Economic Conservatism scale, developed by E.W. Adorno, et. al. (1950). Attitudes towards Watergate will be measured through the use of two Guttman scales which I have constructed. The sample used will be a

stratified random sample of students attending Martin Van Buren High School in Queens Village, New York. The following relationships are hypothesized: (1) There exists an association between party affiliation and attitudes towards Watergate. (2) Attitudes towards Watergate become more critical as income, position on occupational hierarchy, level of educational attainment, and social status increase. (3) There exists a positive correlation between extent of one's liberal attitudes and one's attitudes toward Watergate. In analysis of data a Gamma and contingency coefficient will be used. For the purpose of future research one might test Rosenberg's (1962) hypothesis that a person's level of self-esteem is related to how he views his political world.

Paper II by Betsy Fernbach, Huntingdon Valley, Pennsylvania

Discussant: Caroline Owens

#### The Effect of Certain Birth Orders on Marital Success

This research paper studies the relationship between success in marriage and the sibling position of the two marital partners involved. The conceptual framework, with certain modifications, is patterned after that of Walter Toman. The dependent variable in this proposal is marital success, the independent variable is birth order. Operationally, marital success or the lack thereof, will be defined by an indication of divorce or separation, or if the marriage is intact, by a marital satisfaction questionnaire. The sample will be an availability one. It is hypothesized that marriage between oldest and youngest siblings are more successful than marriages between two oldest or two youngest siblings. Also, oldest male siblings married to youngest female siblings are expected to have greater marital success than oldest female siblings married to youngest male siblings. In this analysis, in which M times N nominal/ordinal table is employed, it may prove beneficial to use the variation of chi-square--the chi square contingency coefficient: With the use of this statistic, the correlational magnitude between the variables can be measured. In future research, additional variables, such as age, should be controlled. Another alternative for future research would be to investigate whether or not youngest siblings married to youngest siblings tend to have more successful marriages than oldest siblings married to oldest siblings.

Paper III by Robert H. Davis, Groves, Texas

Discussant: Kerry Teplinsky

#### A Proposal for a Study on the Relative Representativeness of Negroes in High School Athletics

The research this proposal suggests deal with the possible correlation between the dependent variable Negro relative representativeness in athletics and two independent variables, namely alternative life aspirations and accessibility to sports equipment. The population will include all the black and white male athletes at Thomas Jefferson High School in Port Arthur, Texas. Relative representativeness is conceptually the percentage of male Negroes in sports as compared to the percentage of Negroes in the society. Operationalization of this variable will be by ordinally categorizing it into either over-or under-representativeness. Life alternatives will be defined as the possible occupations one might succeed in and operationalized by ordinally listing the possible various occupations, then with the use of

weighted responses for categorizing the variable into "few" or "many." Accessibility to equipment will be used to mean the types of equipment available during the growing up years. My data collection instrument for the independent variables will be a self-administered questionnaire. From the responses, I anticipate inverse relationships to be present between the independent and dependent variables. More extensive research could be done with the use of more independent variables and also with a larger population, possibly a higher level of athletics.

Paper IV by Katherine Cloward, Blackfoot, Idaho      Discussant: Rick Heckman

Increasing Inter-Racial Tolerance Through  
Subjection to Prejudice and Discrimination

This proposal will study the effect of subjection to prejudice and discrimination on level of prejudice. Attempts to solve the problem of racial biases have been tried before but this proposal involves a new approach. One independent variable, amount of subjection to prejudice and discrimination, and one dependent variable, attitudinal change, shall be investigated. The hypotheses, as the amount of subjection to prejudice and discrimination is increased, the attitudinal change will increase towards inter-racial tolerance and understanding, and, the inter-racial tolerance and understanding resulting from the subjection to prejudice and discrimination will remain with the tested individuals, hopefully shall be supported by empirical data. Two groups of 50 pupils, each from a fourth grade of elementary school, will be tested. Group 1 shall be pre-tested by questionnaire, subjected to prejudice according to hair color divisions, by classmates, and post-tested with the same questionnaire. Group 2 will be pre- and post-tested only, to control for attitude change due to time. These same 2 groups will be pre- and post-tested within the next 8 years twice, once in eighth grade and once again in twelfth grade, in order to measure lasting effects. Time, an extraneous variable, will be measured via the group 2. The anticipated results will be a lasting increase in inter-racial tolerance in group 1 and the same lasting prejudices in group 2, as seen in the first pre-test. Comparisons of pre- and post-tests for each of the 3 test periods for groups 1 and 2 shall provide the method of analysis. If the results are as expected, the hypotheses of this research plan will be supported. With the information discovered in the conclusions of the research, future teaching methods could be improved upon to include awakening students to understanding racial discrimination and prejudice, and eliminating such beliefs. This could possibly enable men to live together in a prejudice-free world.

Session III      Moderator: Mary Beth Stelling      Wednesday, July 24, 1973, 1-2:30 p.m.

Paper I by Pennie Rostow, Ann Arbor, Michigan      Discussant: Debbie Mosler

Personal Security: It's Influence  
on Perceptions of Foreign Policy

The intent of this study is to investigate the relationship between personal security and the individuals attitudes towards foreign policy. The conceptual

framework is derived from the perceptions of astute observers of the American character such as Durkheim, Mayo, and Gabriel Almond; as well as various scales of attitude measurements designed by Srole, Schonbar and Merton. The relationship between two variables was studied. The independent variable, personal security, was nominally defined as the individual's sense of self-assurance and his perceived control over his situation. The dependent variable was the individual's attitudes on foreign policy, nominally defined as the preference of the individual on the posture of the U.S. in the world arena. These variables were operationalized on a 28 question survey which was self-administered to a random sample of NSF participants. The trichotomous answers were scaled and the results were submitted to factor analysis. Four dependent and four independent factors ensued from this process. A multiple regression analysis was then performed from which it was determined that some of the factors did relate to each other. A much larger and varied sample would be required to substantiate the hypothesis, and control for extraneous variance would be necessary. However, inferences from this data suggest that certain factors relating to personal security are significantly related to specific attitudes on foreign policy issues.

Paper II by Vincent DeMarco, Hazlet, New Jersey    Discussant: Paul Conrad

#### Analysis of the 1960 Election

The purpose of this study was to empirically substantiate or refute the widely accepted belief that a certain coalition of groups have composed the Democratic Presidential vote since 1932. This coalition is defined in this study as the groups; urban population, Negroes, college-educated, low-income people, people of foreign stock, workers in AFL-CIO unions, youth industrial workers, old people, people on public assistance, and those who voted Democratic in 1948. The hypothesis in this project is that these groups were indeed significant in the Democratic Presidential vote since 1932. The election used in this study was 1960. Partial Regression analysis found that six of these groups (urban, industrial, low-income, industrial, low-income, union, old people, and foreign stock) were individually significant in the Democratic vote of 1960 (predicted over 5% of it). However, because of the large amount of collinearity among the groups, factor analysis was needed before their combined importance (through multiple regression) could be found. This technique arranged the groups into three non-correlated combined groups; Urban Minority, College-educated youth and aged, and Industrial. When a multiple correlation was run on these, they predicted only 20.9% of the Democratic vote. The original hypothesis is partially substantiated in that most of the groups are individually significant. However, their low combined significance, shows that they are not as important in the Democratic vote as was believed by this researcher. Further research is needed in order to compare these results with a similar study of a New Deal Election (1932-1948).

Paper III by Kenneth Finegold, Brooklyn, New York    Discussant: Alan Greenspan

#### Causes of Liberalism in the United States Senate

Research involved a study of liberalism in the Senate, as reflected in roll call votes of the 92nd Congress. Liberalism scores were calculated as

percentage of times agreeing with New Republic stands on twelve key issues selected by the magazine. This was the dependent variable; independent variables were the state percentage of the vote for Humphrey in 1968, the percentage poor and the percentage urban, and on a personal level, the Senator's party, race, religion, sex, college, military and legal experience and the number of years in the Senate. Multiple regression analysis was employed to find out how important each variable was in determining liberalism. Only the Humphrey vote, the party and the percentage poor explained more than 3% of the variance. From these three variables, a formula was derived for predicting the liberalism of a Senator. The wide standard error of estimate makes precise prediction impossible, but permits prediction of whether a Senator is liberal, conservative or middle-of-the-road. These three factors explain 56% of the total variance. Further research is urged in explaining more variance and allowing prediction on specific issues, rather than a group of issues.

Session IV Moderator: Kathy Bolles Wednesday, July 25, 1973, 2:40-4 p.m.

Paper I by William Shebar, Freeport, New York Discussant: Larry Hohm

The Effects of Two Schedules of Reinforcement on  
Concept Reversal in Children

The proposed study is intended to investigate concept reversal (IDr) performance in children as a function of continuous (CRF) and variable-ratio (VR) reinforcement. The research design incorporates a new conceptual framework to evaluate Ludvigson's (1966) hypothesis that resistance to extinction of the pre-shift concept in a reversal task is directly related to the post-shift performance. The proposed methodology designates schedule of reinforcement, rather than overlearning (see, for example, Wolff, 1967), as the independent variable affecting reversal learning. The experimental design employs two independent groups of subjects, one learning the pre-shift concept with CRF, and the other with a VR2 schedule. The dependent variable, IDr performance, was operationally defined in three ways: (1) number of post-shift trials needed for criterion performance, (2) number of post-shift errors prior to the initial response to the reversal and (3) total number of post-shift errors. It was hypothesized that, on the basis of an independent t test, the three measures of the independent variable would be significantly higher in VR-trained group. It is suggested for the purpose of future research that the new methodology discussed in this proposal be extended to an analysis of various schedules of informative feedback as they affect IDr performance in adults.

Paper II by Nancy Miller, Allentown, Pennsylvania

Discussant: Jennifer Katz

Sex as a Determinant of Territorial Encroachment

The basic purpose of this study is to investigate a relationship between territoriality, or the human tendency to stake out personal territory, and territorial encroachment dependent upon sex. Klopfer found when apportioning

space, social status is a determining variable. In observing USA society, Lyman & Scott (1967) concluded that certain groups are deprived of territorial encroachment; mainly Blacks, women, youth and inmates. The independent variable will be the availability of the subject's territory, operationally defined as the withdrawal of the subject's chair. The dependent variable, the subjects process of relocation, is operationally defined as the action the subject takes in relocating himself in a chair--either by occupying the available chair or establishing an entirely new territory. Four hypothesis will be tested: H<sub>1</sub>) A female's territoriality is likely to encroach upon another female's territoriality, H<sub>2</sub>) A female's territoriality is unlikely to encroach upon another male's territory, H<sub>3</sub>) A male's territoriality is likely to encroach upon another female's territory, H<sub>4</sub>) A male's territoriality is likely to encroach upon another male's territory. In this experiment, sex will serve as a control. The sample in this study will be an availability sample taken from a high school. Data will be obtained through actual observation. A group of six, assemble themselves around a table in a leaderless discussion group. Six are confederates. Extra chairs pose against the wall. During the first meeting the six seat themselves arbitrarily. At the second meeting, five confederates sit in former seats to further exaggerate territoriality. Upon arrival at the third meeting, subject's chair is removed, absent confederate's chair is vacant. Subject can pull up a new chair, or sit in vacant one.

## PROJECT EVALUATION

According to plan, there were a number of avenues for evaluation of the Institute. These included input from the students and faculty participants as well as an outside evaluator. (See Appendix) In addition, there were attempts to obtain some empirical data to evaluate the substantive learning of the participants, as well as some components of critical thinking.

### Substantive Results:

Pre-tests were given at the beginning of both the major segments in the Methodology Section during the first two weeks of the Institute. The focus in both pre- and post-tests were the same type of reasoning and tool usage skills, although the items were not identical. There was a mean percentage increase of 20% in the post-test over pre-test scores in Test I. A total of 46 of the participants experienced increases of at least 4 percentage points or more. In Test II, the materials covered were less general reasoning and philosophy of science oriented, and more specifically directed to statistical and analytical techniques used in social science research. The absolute increases from the pre-test to post-test was from a group mean of 16% to 60%. Again focusing on individual scores, all of the participants for whom pre-tests were available (53) experienced a change in a positive direction of at least 4 percentage points.

### Student Orientation to Educational Benefits:

An attitudinal questionnaire was used at the beginning and end of the Institute to help participants look critically at their own pattern of study skills and educational experiences. Out of 37 questions, two seemed to be of particular significance in evaluating the effects of the Institute on participants: "In your educational experiences up to now, to what extent do you feel that you have made progress or been benefited in each of the following areas?"

8. Quantitative thinking--understanding concepts of probability, proportion, margin of error, etc.
9. Develop an understanding of the nature of science, experimentation and theory.

Of the group of 52 students for whom both pre- and post-tests were available, 60 percent (31) ranked the benefits derived from their educational experiences in terms of quantitative thinking higher after completion of the Institute. Twenty-nine percent ranked the quantitative skills dimension the same in both the pre- and post-test and 11 percent ranked it lower at the conclusion of the Institute. In regard to the second question (above), 63 percent ranked their educational experiences with respect to understanding scientific method higher after than before the Institute began. While the number on which the findings are based is quite small, the differences are statistically significant and probably have substantive significance as well.



Critical Thinking Test:

NSF participants were pre-tested and post-tested on the Watson-Glazer Critical Thinking Appraisal. National norms were available for high school students permitting a comparison with group means nationally. The group mean percentile on the pre-test was 86.9 while the post-test group mean percentile rank was 85.7 indicating a slight but statistically insignificant drop. When the individual pre-test scores were divided into two groups (those scoring below and those scoring above the group mean) it was found that those in the lower group experienced significant increases. Although not statistically significant, it is probably of value to use a national-norms test of this type for comparison of NSF participants. One explanation for the lack of increase was the whole mood associated with taking the post-test was much less serious, i.e. there was less impetus or competitive spirit than had been true in the pre-test. Another explanation was that participants had just completed their final projects and a significant number of them had had very little sleep on the previous two nights.

Program Evaluation by Participants

Fairly extensive evaluation instruments were administered to participants at the conclusion of each of the three major segments of the Institute. A summary of some of the significant findings are presented here:

- (1) Questions regarding the most significant aspects of the program are shown according to mention as the "most" or "next most significant"

Meeting and working with other gifted students	65%
Exposure to a range of Social Science findings in the Module Segment	60%
Individual Research Projects in the Final Segment	45%
Meeting and working with professors	38%

- (2) Suggestions for retention of program elements:

Computer usage segment was valuable and should be kept	91%
Field-trip to Chicago (NORC, Research facilities of University of Chicago, and Museum of Science and Industry) was useful	88%
Research Manual and Exercises (developed for the program) felt to be useful and to be a continuing help during high school and college.	71%

- (3) Suggestions regarding possible changes:

Textbook could be dropped since much of the material was covered in class lecture	66%
SIMSOC could be dropped (although a number felt it should be given another try in a shorter time period)	62%
The Field-trip to Dickson Mounds, New Salem and Springfield could be eliminated or else better integrated	75%

(4) Judgments regarding grades and credit for program:

There were a number of complaints about the competitive spirit produced by knowledge that students were to be evaluated. The prevailing judgment throughout the Institute was that the most ideal situation would be to have no grades but award credit for the work. There was some movement by the end of the Institute to a position which would favor both grades and credit. A large majority felt that getting no credit would be a serious detriment to the probability of students being attracted to the program.

(5) Evaluation of Lecture and Lab during Weeks 1 & 2.

Some useful suggestions were made regarding the presentation of core materials during the first two weeks. There was some agreement that the first two weeks were exceptionally demanding, too concentrated and tiring. A number suggested stretching this segment out to three weeks (This would have been the case under the original proposal) A few students suggested it would be helpful to vary the format of lecture and discussion more, and to include more practical examples and problem-solving situations. Some dissatisfaction with the scheduling of the computer segments was encountered.

(6) Evaluation of Social Science Modules during Weeks 3 & 4

The overwhelming evaluation of this portion of the Institute was how valuable it was in exposing them to a wide range of social science subjects. A number indicated a desire to have a greater range of Psychology subjects (which would have been possible with the original proposal and staffing proposed there). Almost half of the students felt that this segment should be extended to allow a greater amount of time in each Module. (Again, the original plan had been for there to be three modules one week in each).

(7) Evaluation of the Individual Research Segment during Weeks 5 & 6

We have less systematic evaluation from students of this segment because it came so close to the final evaluation; however, on the basis of letters received from students and oral comments there is some indication that this portion was exceptionally useful. A number of the students anticipate completing their research during their Senior year in high school--an idea which concurs with our hope.

Evaluation of the Dorm Counselors by Participants

The Dorm Counselors had been viewed by the staff as an integral part of the Institute. Students responded very positively to the counselors on the

whole and I was very pleased with their performance. The following are illustrative of comments about the dorm counselors in the final evaluation.

- Very nice and helpful in both academic and social areas of the program
- Great! Really helped me when I needed them
- Terrific--Really friendly and understanding
- Very cooperative and helpful
- True understanding of participants and helpful attitudes
- Cool!

Other comments were more moderate, and probably help provide a balanced overall evaluation.

- They weren't very necessary
- Very good . . . could have been around a little more
- Only one counselor per floor was really necessary. They should be there more to aid in group activities rather than merely serving as chaperones
- Take them or leave them--seemed to do next to nothing

#### Overall Evaluation of the Institute by Students

It seemed useful to ask students to make some comments which could be used as judgments of their overall reaction to the Institute. It is recognized that there is a difference between short-run and long-run effects, these are an indication of the very positive student response we received both at the conclusion of the Institute and since that time in unsolicited letters from participants. Clearly many of the participants found the opportunity to be on a college campus and in a situation where they could be independent of their families appealing, but we have tried to present here comments which would reflect the goals of the Institute more directly.

I believe the goals and objectives set forth by the Institute staff have been reached by the vast majority of the participants. It was most definitely a valuable experience. In fact, I am dismayed that it could not be extended further than six weeks.

I really feel that this institute has helped me in determining my interests, abilities and limitations in the area of social science by allowing me to participate in so many different aspects of the field. It has not only accentuated my interests in certain fields but has shown me my limitations in them.

This Institute has helped me understand scientific method as it is applied to human behavior, it has united my long standing interest in social and political activities with a respect for an ordered and scientific approach to these fields which I never fully developed before this Institute.

I was placed in a situation of competition whereby I had to think not just do a mediocre amount of work for an "A" in the course as in high school. Also being in contact with fifty-five kids of various backgrounds, I learned a lot about human nature and myself and how I relate to people. The individual research was a test of maturity on our part--Are we responsible to take on the project? It was established that we were.

The courses introduced many new facets of science I had never seen before. The course only gave an overview but gave me enough to get interested in subjects to look up more about them and search for more knowledge.

An institute such as this represents a chance to be exposed to an entirely new type of learning experience, as it was for many of the participants. Many high schools don't have a broad enough scope to acquaint its students with the type of opportunities given in this institute. This institute has also helped many participants get a clear idea of what goals they intend to pursue in further education and life.

The NSF program gave me the opportunity and stimulus to realize just how much further I can go with my intellectual ability. The atmosphere which proved to be conducive to learning and finding out to learn more was invaluable as was the attention and concern we, as students, received from all those associated with the institute.

It provided the opportunity for a lot of independent work in a relatively non-competitive atmosphere. The contact with university professors was also quite valuable. The social atmosphere was also fun--more stimulating than one would expect. The structure of the program was well-adapted to gradually developing a student's interests in social science. The specificity gradually increased. So as the student acquired more scientific behavior, he developed more specific interests.

You really learn your limitations. You know just what you can accomplish if you have to. It is an honest look at college life. I learn so many things about what I want My Future to be. I personally learned more about social science in six weeks than in all my high school classes. I have increased my interests in social science. I am now sure that social science is the area into which I want to project my interests. In high school I would never have had a chance to learn all the things I learned here.

This program helped create a sense of independence within me. Instead of always depending on the teacher for every answer, I learned to think for myself. The chance to compete with students with abilities equal to or greater than mine inspired me to work all the harder.

There is much to merit to this program. For instance, I came here knowing I was very interested in social science, but having had little experience in the field. This program exposed me to a methodological approach to the science, completely new to me. Now I can narrow down more specific fields of science I wish to pursue. The program has succeeded in offering me background information in order to aid my search in finding a field of study.

This program has aided me in identifying my scientific interests-- I've discovered that I possess a mild distaste for sociology and a wild passion for psychology--a subject I will definitely pursue in the future. It has exposed me to college teaching and facilities which I will miss dreadfully when I go home. The library alone was worth coming for.

I had no idea before I came here just what many social scientists actually do and so this program was great for that. It really gave me the feeling that I was in on everything--all the journals, resources, etc. that you would never have heard about in high school. I had never realized that social studies could be so scientific! Now I know what to expect if I go in one of these areas.

I think this Institute has been one of the most helpful and motivating experiences thus far in my life. The actual learning was great, but the learning by association with students and instructors was even better. I hope the Institute can continue to operate and that others will participate.

I think that this summer has helped me to improve my research techniques and my ability to cope with problems in a scientific way. The wide scope of experience was very good in that it opened my awareness to fields of science that I never really had thought about.

#### Staff Reactions and Recommendations

(1) Effective features of the project:

- a. Each participant had first hand contact with ongoing and completed social science research. This was particularly true in the social science modules and in the individual research projects. The impact of this contact was heightened as a result of the completion of an overview to social science methodology in the first section. The interaction with university research social scientists was similarly a significant aspect of the project.
- b. Each participant had opportunity for intensive contact with a wide variety of intelligent and interesting high school students from twenty-one states. All of the participants had high academic potential and achievement records. This situation provided participants with an opportunity to compete in a more realistic setting than in many of their high schools, and consequently to extend their own potential, and gain confidence regarding their true abilities realistically.
- c. The particular structure of the Institute was rather different in its approach, I think. The introduction to methodology and the tools of social science provided the participants with a foundation on which to build rapidly during the second two segments. The intensity of instruction during the first instructional segment capitalized on both the initial motivation of participants and established the serious mood of the Institute. Subsequently, we were able to permit a more relaxed formal schedule and to encourage the pursuit of individual interests between participants and staff and in independent work.

(2) Problems encountered and methods of solving them:

- a. The intensity of the first two weeks did become a bit oppressive at some points, especially with the computer segment running simultaneously. There seems to be good possibility for varying the pattern of lecture sections and discussion better throughout the day, and moving the computer instruction to a concentrated segment of its own which does not have to compete with other instruction.
- b. The Psychology dimension was weaker than I would have wished, and some students who hadn't understood that the Institute was intended as an experience in all three social science disciplines and who had come primarily for a Psychology experience were disappointed, although there was a consensus of the value of the overall program. The solution to this problem would appear to be obvious--to add a Psychologist. The problem is that few university professors are able to change their budget to work on 6 weeks instead of 8 weeks of normal summer school. Thus, unless funding is possible for the normal summer period, it will be difficult to obtain the type of faculty which are essential to the success of this sort of project.
- c. The Individual Research projects were rushed for many of the participants. We did provide an opportunity for an initial presentation to a small group and then a re-write, which was very helpful in developing scientific writing style and thorough substantiation of conclusions etc. However, the time available for the initial design of research, review of literature, etc, was simply too short. I've really got no suggestion apart from a longer project. I'm reluctant to suggest eliminating the modules, as many of the research ideas grew out of those experiences. Similarly, the initial Research introduction was already as full as it can be. My only solution is an extension of the project to an 8-week Institute. Incidentally, in connection with the Individual Research section, supervision was by different faculty and research staff, and there needs to be better agreement regarding a standard method for evaluating the research projects--something which could be established without too much difficulty I think.
- d. Administrative time requirements of me were almost overwhelming during the Institute itself. While trying to carry a full instructional load, taking care of the other details of the Institute were quite difficult. My suggestion is that for the duration of the Institute that there should be a full-time secretary which could take major responsibility for scheduling, student problems, etc. By and large, the Institute worked very smoothly, but I think that there was little awareness of just how much was involved in making it that way.

(3) Changes to make the Institute more effective

The elements above suggest some logical changes if they can be worked out. Many of the solutions lie beyond my capability to effect changes. It was a consensus of staff and students that we would have profited from an 8-week instead of a 6-week project. This would have permitted us to retain our Psychologist in all probability. I believe we demonstrated that there was enough appeal to attract 60 students of sufficient capability to profit from this type of Social Science program, and our initial proposal had been built on the formula of 8-weeks and 60 students. I think that some adjustments in program scheduling is possible, but major changes would depend on the total length of the Institute.

(4) Estimated Effect on Participants

It is our overall conclusion that the basic objectives of the Institute were met. The Institute familiarized participants with the methodological tools of scientific investigation in the social sciences. It initiated and advanced interest in the specific subjects within sociology, psychology and political science. The setting provided sufficient competition to help students judge with greater accuracy the extent of their abilities and potential. This latter point seemed evident among some students who appear to have been "coasting" in their high school work; on the other hand we have some evidence in letters from participants to suggest that some are finding their senior year rather boring in comparison to the highly competitive setting here.

(5) Estimated Effect on Staff and Sponsoring Institution

The staff are convinced of their tremendous personal learning. We found the participants exceptionally challenging to us personally during the Institute and some of the students have entered into continuing collaborative research efforts with staff. We felt that the contact helped us understand the capabilities and experiences with which many of our Freshmen come to the University experience, thus our regular teaching should be improved. For Illinois State University, there is tremendous opportunity for instilling favorable impressions on participants and others to whom they speak about the Institute. We have reason to believe that a significant number of students will give ISU consideration in making college choices, and the possibility of attracting students of such capability and interest in the social sciences is naturally attractive to our departments here. It is much harder to make a realistic evaluation of the overall impact on the University. We tried to keep a number of persons in the administration aware of what we were trying to do and we trust that it may make them more eager to participate in the development of supplementary support for the project in subsequent years.

In conclusion, I feel that the concept of the Institute was useful and that the program was overall successful in meeting its objectives. We have submitted some evidence which allows our judgments in this regard to go beyond personal bias associated with our involvement. We found the program personally rewarding and challenging, and we would look forward to the opportunity to lead a similar experience with another group of students. We anticipate submitting a new proposal this coming year, and we would encourage the NSF Program Staff to do everything in its ability to retain this category of program for Secondary Level Science Training.



APPENDIX

ILLINOIS STATE UNIVERSITY

FOUNDED IN 1857  
NORMAL, ILLINOIS 61761

DEPARTMENT OF HISTORY

July 26, 1973.

Telephone: 309/436-6641

TO: Dr. David Eaton, Department of Sociology, ISU  
SUBJECT: Evaluation Report; Illinois State University/National Science Founda-  
tion Summer Institute in Social Science Methodology (June-July 1973)  
FROM: Dr. Charles E. Gray, Department of History, ISU.

This evaluation report is based upon formal and informal conversations with both Institute staff and participants, a number of classroom observations, and examination of materials produced by staff members and participants. The evaluator was present at the following Institute sessions:

1st week: 3 lecture-discussion sessions (Dr. Eaton in charge)  
3 lecture-discussion sessions (Dr. Tolone in charge)  
2nd week: 3 lecture-discussion sessions (Dr. Verner in charge)  
6th week: 1 luncheon (informal)  
2 paper sessions (conducted by participants)

The Institute was extremely well organized. Participants were provided with all necessary information concerning: (a) housing accommodations, (b) purposes of the Institute, (c) learning objectives, (d) University facilities and instructional resources. Throughout the Institute participants had access to outstanding graduate students, social science scholars, and counselors. The Institute was highly structured in the beginning and the pace was quite rapid; as the Institute progressed both the structure and pace became more "flexible" to allow for individualized work. The following are some impressions of highlights of the Institute gained through the observations (etc.) listed in the first paragraph above:

- (1) Participants appeared enthusiastic and highly motivated throughout.
- (2) Faculty members were well prepared for their roles in the various sessions.
- (3) Variation of types of sessions consistent with type of topic or skill involved.
- (4) Staff visibly demonstrated concern about individual students.

- (5) Students given opportunities to investigate topics of particular interest to them.
- (6) Variation in structure and pace of Institute contributed to efficient operation of Institute and to student needs.
- (7) Logical organization and sequence of subject matter content.
- (8) Student led paper sessions on last day were the highlight of the Institute; student presentations were on a level comparable with upper level University students.

The following comments are intended as suggestions which might be incorporated into future Institutes of this type.

- (a) Shorten length of some of the lecture-discussion sessions (adolescents tend to tire after an hour or so)
- (b) Have refreshments available during breaks in lecture-discussion sessions.
- (c) Increase utilization of multi-media resources in presentations.
- (d) Have all (or most) sessions in a complex of rooms in same area as student housing and dining facilities (increased centralization of facilities).
- (e) Make film and audio-tape records of representative sessions of the Institute.

In summary, the Institute appeared to be highly successful in all respects. Institute objectives were achieved and the high school students left with both social science skills and an obvious enthusiasm for the social sciences as areas of knowledge.

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