

PROJECT STATEMENT

2/p.
5/26/72

A. PROJECT SUMMARY

1. Statistical

Project Title: The Effects of Environmental Enrichment on Subsequent Development of Malnourished Children

New or Extension: New

Contractor and Address: Columbia University
College of Physicians and Surgeons
630 West 168th Street
New York, New York 10032

Principal Investigator: Dr. Myron Winick, Director
Institute of Human Nutrition
Columbia University
College of Physicians and Surgeons

Duration: July 1, 1972 to June 30, 1973

Total Estimated Cost: \$11,222

Funding by Fiscal Years: FY 72 \$11,222

Project Manager:

AID/TA/N Dr. Irwin Hornstein

2. Narrative

Since the inception of an adoption program in 1960 for orphans from South Korea, several thousand children have been adopted. Many of these children have histories and documented measurements indicating that they were severely malnourished during the first 2 years of life. Others were well cared for by their parents but put up for adoption for a variety of reasons. Subsequently both groups have been adopted into middle class Western homes. The environment in these homes have been carefully

screened so as to insure proper conditions for caring for the children.

This then, represents a naturally occurring situation in which a severe bout of undernutrition, early in life, has been followed by a complete change in "environment" after rehabilitation in the hospital. These children now 8-14 years of age have received since their adoption both adequate food and "stimulation" in a Western setting.

The specific aims of the proposed project are to compare the mental and physical development of 3 groups of children (a) severely malnourished Korean children who were adopted, (b) normal Korean children who were adopted and (c) the Western siblings of these adopted children from the adopting families.

A comparison of this nature could indicate whether severely malnourished children, including children who had suffered from marasmus and kwashiorkor, could recover normal growth and development if placed at an early age into an "enriched" environment.

This proposed study provides a unique opportunity to provide information regarding the effects of malnutrition in the first years of life on subsequent mental and physical development. Studies designed to resolve this question generally attempt to separate socio-economic from nutritional effects. Such studies are time consuming and expensive with only a marginal probability of success. From an AID viewpoint it is important to know whether a severely malnourished child can become a physically and mentally healthy individual, if, at an early age, he is placed in a favorable environment. If this can be done, rehabilitation is possible. If not the question of relative importance of culture vs. nutrition is academic. This study therefore affords an unusual opportunity to provide needed information on a vital subject at a minimal cost in time and money.

A. Expanded Narrative Statement

(1) Background:

During the past 15 years, a number of studies involving several different scientific disciplines have associated malnutrition imposed during a critical period of development and permanent changes in brain structure and function. The implications of the observations in a world where hundreds of million of children have been and are continuing to be nutritionally deprived in infancy are obvious. Not only are they to be handicapped, but the resulting handicap may well prevent them from extricating themselves from the conditions which breed malnutrition and therefore their children are at risk of suffering the same handicap. Thus, poverty results in undernutrition which causes retarded brain growth and function which limits earning capabilities which leads again to undernutrition. This is the vicious cycle first pointed out by Cravioto.

This association of undernutrition and brain development has been made in complex human situations which has not allowed isolation of malnutrition as the only significant variable. Malnutrition occurs in a milieu of low socio-economic status, reduced education, poor sanitary conditions and is further complicated by recurrent and severe infections. These children, then, are exposed during their early formative life to a variety of complex environmental stimuli only one of which is undernutrition. Studies to date also suffer from the lack of standardization of intelligence tests. Tests developed in advanced countries may have little meaning in developing countries, especially if large cultural differences exist.

The proposed study by looking at children transferred to a relatively homogenous environment bypasses these difficulties.

(2) Proposed Work Plan

(a) Criteria for Selection

Careful records have been maintained by the agency of the children's backgrounds prior to initial contact. On initial contact a history and physical exam as well as anthropomorphic measurements by a physician are available. Since initial contact with most of the malnourished children was made in the hospital, records documenting nutritional status at that time are available. For example a number of children studied under the care of Dr. Ruth C. Harris, Assistant Professor of Pediatrics at College of Physicians and Surgeons, Columbia University, not only had complete physical exams but serial measurements of height, weight and head circumference as well as chest Xrays, Xrays for bone age and laboratory examinations of serum proteins, hemoglobin, etc. (Dr. Harris spent two years in Seoul as a physician for this program).

Records of all children admitted to the program between 1960-1967 will be examined. (These are presently housed for all children who have been adopted at the institution in Korea). Approximately 3000 children were admitted into this program during these years of which about 2000 were adopted.

Four groups of 100 children each will be carefully selected. All of these children will be girls (since the majority of the children put up for adoption during early life, for cultural reasons are girls). In addition those who were placed will have been adopted before they were two years old. All of the families into which they were adopted will have had either prior or subsequent children of their own.

Children meeting these general criteria, will be divided into four groups.

Group I. Severely malnourished during the first year of life and subsequently adopted.

All of these children will have been below the third percentile for height and weight for normal Korean children. They will have had clinical signs of severe marasmus or mixed marasmic kwashiorkor during the first year of life. In addition the following information will be used where possible. Reduction in head circumference, signs of vitamin deficiencies, bone age Xrays, serial measurements of growth. Laboratory examination of serum proteins A/G ratio, hemoglobin, etc. Pictures of many of these children are available on admission to the program and should be helpful in establishing nutritional status at that time. Except for the nutritional abnormalities both history and physical exam must have excluded any other physical or developmental abnormalities.

Group II Well nourished children subsequently adopted. These children will have been admitted to the program during the first two years of life and subsequently adopted before they were two. They will all have been at or above the 50th percentile for height and weight on admission and their medical examinations will not have revealed any nutritional or other abnormalities prior to adoption.

Groups III and IV. The closest aged siblings born into the families into which groups one and two children have been adopted.

These children will be sex matched and screened to exclude physical abnormalities, developmental abnormalities and nutritional problems.

(b) Assessment of Subsequent Development

1. Children in United States

Through Recorded Material

1. Physical Growth

School health records will be examined and data on height, weight and other anthropomorphic measurements recorded. Records of infectious diseases will be recorded as well as school absences for illnesses. The family physician will be contacted and his records examined for above measurements. Serial anthropometry, illness, etc.

2. School Performance

These children at present should be between eight and fourteen years old. Therefore their school performance as measured by the standard evaluation tests and by the students grades should be available and could be compared with similar evaluations of the siblings made by the same individuals in the same schools.

3. Developmental Testing

In most American schools periodic I.Q. testing is done. The results of these tests should be available and could be compared among the various groups.

(c) Detailed Study Procedure

The study will be supervised by the principal investigator who will make the final decision on the appropriateness of the groups selected after initial screening of the records by Dr. Ruth Harris, Miss Bess Miller and Mrs. Knarig Meyer (a doctor of Public Health candidate with a Masters degree in nutrition who will work on this study full time to develop her thesis.

Once the groups are selected, letters of inquiry will be sent to the parents outlining the study and requesting permission to write to the schools and family physicians. Any refusals will be noted and the reasons for refusal analyzed. Any differences in refusal rate between the malnourished and well nourished group would be noted and the reason for these differences analyzed. Letters requesting records from the school and family physicians would be sent and these collected and analyzed as previously outlined. Visits to the school, home or family physician would be made only if necessary. However telephone conversations would be used frequently to augment the letters. These data would then be examined, completed and analyzed for differences between the groups. Objective differences in I.Q. scoring and scoring on other developmental tests as well as on grade scores will be compared statistically and their significance if any determined. This part of the study will be conducted by Miss Miller with the help of the Division of Biostatistics of the School of Public Health.

Should the project warrant further study a second phase not included in this budget can be developed. This would involve physical and psychometric testing and interviews with the family and teachers.

This would be conducted by a team consisting of a physician, psychologist and education specialist and would involve home and school visits and conducting tests. This could be done as a double blind study the team not knowing the previous history of the Korean children.

3. Significance of Project to AID Objectives

The major objective of AID program is in the final analysis to improve the Quality of Life of the peoples in the LDCs. Early malnutrition is a fact of life in many of the LDCs and finding an effective means of combatting malnutrition is a prime AID objective. Program to provide low cost high protein foods, nutrition education etc. are underway worldwide.

If it can be shown that the consequences of early malnutrition can even partially be revised by enriching the subsequent environment in which the child is reared then we can begin to think in terms of specific programs to enrich that environment. Thus we can begin to think in terms not only of preventing malnutrition but how to alleviate its devastating results.

4. Evaluation of Research Competence of Investigator

Dr. Myron Winick, the senior investigator is recognized for his studies on the effect of malnutrition on brain development. He was formerly associated with Dr. Barnes at the Department of Pediatrics at Cornell University Medical College. Dr. Winick has recently assumed the directorship of the Institute of Human Nutrition at Columbia University.

Dr. Ruth Harris, assistant professor of Pediatrics at the Columbia University College of Physicians and Surgeons spent 2 years in Seoul where she was visiting professor, Department of Pediatrics, Severance Hospital and Yonsei University, Seoul So. Korea. During her assignment in Seoul she was deeply involved in the adoption program.

5. Appraisal of Research Resources and Budget

The Institute of Human Nutrition maintains an administrative building with approximately 7500 square feet of office and classroom space. Office space is available within this building for this study. In addition the Institute has a small computer which could be programmed to handle some of these data. The University Computer Center is also available if necessary.

The estimated cost of the project appears reasonable and justified. A detailed budget is given in Attachment 1.

6. Summary Evaluation

TA/N believes that this proposal deserves favorable consideration. The project address itself to one of the most crucial questions that can face a government planner in the LDCs -- "Does malnutrition during the first 2 years of life produce permanent physical and mental damage. We believe that valuable information can be obtained as a result of this study that will have profound implications for nutrition programs in the IDCs.

The costs for carrying out the study are minimal and AID has an unusual opportunity to obtain a valuable return from a modest, "one-shot" investigation. We strongly urge funding of the project.

BUDGET 12 MONTHS

| | <u>% Time</u> | <u>Salary</u> |
|--------------------------------------|---------------|---------------|
| M. Winick, Principal Investigator | 5 | 0 |
| R. Harris, Asst. Prof. of Pediatrics | 10 | 0 |
| B. Miller, Research Associate | 50 | 4000 |
| K. Meyer, Graduate Student | 100 | 0 |
| Secretary | 25 | <u>1800</u> |
| | | |
| Total Salaries and Wages: | | 5800 |
| <u>Composite Fringe Costs</u> | 13% | 754 |
| | | |
| <u>Other Expenses:</u> | | |
| Office Supplies | 1,000 | |
| Telephone | 500 | |
| Travel | 500 | |
| | | |
| Total Other Expenses: | | 2000 |
| | | |
| Indirect Cost Allowance | | |
| 45 % of Salaries and Wages | | <u>2610</u> |
| | | |
| Total Budget | | 11, 164 |

January 20, 1972

**GUIDELINES FOR PREPARATION
OF THE
RESEARCH ANNUAL REPORT**

The attached guidelines suggest the format and the detail for annual research reports that are required in all research contracts. The research contractor will submit thirty-five copies of the report with appendices to the A.I.D. Project Manager. The A.I.D. Project Manager will submit two copies to TA/RUR and two copies to the A.I.D. Reference Center.

The outline should prove useful to the contractor in preparing the report, and provide an improved basis for annual project reviews. The contractor is encouraged to develop a self-contained report as outlined below in approximately fifteen double-spaced pages. Additional material may be annexed as necessary for a comprehensive report. The fifteen page report is intended to provide a barebones statement of the effectiveness of research resources and methods in producing research results according to annual work plans, and the significance of these research results for the solution of the problem being addressed. Annexed material is essential for a critical review of assertions regarding findings, significance, etc.

REPORT SUMMARY 1/

- A.
1. Project Title and Contract Numbers:
 2. Principal Investigator, Contractor and Mailing Address:
 3. Contract Period (as amended): 2/ from _____ to _____
 4. Period covered by Report: from _____ to _____
 5. Total A.I.D. funding of contract to date:
 6. Total expenditures and obligations through previous contract year: 3/
 7. Total expenditures and obligations for current year: 3/
 8. Estimated expenditures for next contract year:
- B. Narrative Summary of Accomplishments and Utilization

(In this space provide a concise statement of the principal accomplishments during (1) the period of the report and (2) life of the project in relation to research objectives and actual or potential operational significance.

This information does not substitute for a full discussion of the same points required in the body of the Annual Research Report as outlined below.)

- 1/ "Report Summary": Statistical Information (Item A) and the Narrative Summary of Accomplishments (Item B) should be reported on a single page. This page will be for general public use as well as project management purposes, and should be written for a general rather than a technical audience.
- 2/ Item 3 - Contract Period (as amended): Report the original date of the contract and closing date as prescribed by the contract or any amendment thereto.
- 3/ Items A 6-8: These items refer to expenditures including firm obligations by the contractor. Obligations are the contractor's legal but unpaid commitments, i.e., subcontracts, purchase orders, etc.; and other related accruals through the end of the reporting period. A "contract year" is one between anniversary dates of the contract.

ANNUAL RESEARCH REPORT

A. General Background

Prepare a concise statement that provides the background and rationale that led to the initiation of the project. This summary should state the nature and importance of the problem to which the research is addressed, and the rationale that links the research activity to the problem.

B. Statement of Project Objectives as Stated in the Contract

The purpose of this section is to record in a precise and concise way the objectives of the research project. The objectives as stated in the contract may have been interpreted, expanded or further defined in other documents and mutually agreed to by A.I.D. and the contractor. This section should reflect the contractual objectives as modified by these supplementary understandings.

C. Continued Relevance of Objectives

Does your research to date, or other circumstances, indicate a need for modification of project objectives as stated in the contract? If so, in what respects?

D. Accomplishments to Date

1. Findings: Provide a statement of the principal and significant findings and other accomplishments for the reporting period as they relate to the anticipated results in the year's work plan. (See material for the year similar to that requested in G.1. below for the coming year.)

Discuss the operational significance of the findings of the current year's research for attainment of project objectives as stated in Section B above. The discussion should include reference to existing knowledge, recent research findings by others, and cumulative findings and accomplishments of this project.

Also discuss side effects of the work, positive or negative. For example, do the findings to date suggest unexpected complications for the application of findings; do they suggest the need for more direct approaches to the problem than were originally anticipated; or is the research developing information and insights not expected in the scope of the work?

2. Interpretation of Data and Supporting Evidence:

Summarize briefly the evidence and analysis that support the findings cited above. To permit a critical analysis of the evidence and analysis, expand as necessary in an appendix to each copy of the report.

3. **Research Design:** State briefly any significant modifications made in the research design prior to the current reporting period.

Are the present techniques, instruments or mode of inquiry appropriate and/or optimal for the study design? In view of the findings of the past year or your experience with the research measures employed, do you recommend modifying (1) the research design or (2) research techniques? For example, have there been special problems of data availability, sampling, data processing, or ineffective techniques? Have research findings revealed technical relationships that suggest a continuation of present methods or do they suggest a new approach?

E. Dissemination and Utilization of Research Results

1. Briefly describe efforts made under the contract to disseminate the results of the research project. Attach as appendices two lists: (1) a bibliographic list and an abstract not exceeding 200 words of papers and publications developed under the contract and (2) a list of short statements that identify each known use of materials produced by the project for seminars, conferences, translations, or as background material for speeches, policy statements, etc.

2. Cite evidence and cases known to you that findings of the research project are being used in LDCs, the U.S., or both, in training, direct application to the problem, etc.

3. Has the experience of the past year suggested new or more effective ways to expand the use of research results? If so, discuss the experience and as appropriate include proposed steps in the work plan (Item G below). Indicate whether your proposals can be carried out under current provisions of the contract, or would require new contract arrangements by A.I.D.

4. Discuss the extent and nature of considerations to involve LDC personnel and/or institutions as an appropriate activity of the project. If judged appropriate, discuss the kind and extent of LDC involvement in (a) planning the project, (b) the execution of the field work, (c) the analysis and reporting of results. Plans to involve LDCs in the future should be reflected in the work plan in Item G (4) below.

5. Under separate cover forward four copies of publications, seminar reports, translations and other materials representing efforts to disseminate results of the research project, and evidence of the results being utilized by LDC or U.S. people or institutions.

F. Statement of Expenditures and Obligations and Contractor Resources

Provide a statement of expenditures and obligations related to the budget plan for the year. This statement should show expenditure and obligations for each of the (1) major inputs (Personnel, equipment, travel, etc.) according to (2) the major accomplishments or work targets that had been planned for the year's work.

Identify significant problems or accomplishments in the progress of the project related to the volume, effectiveness, or scheduling of the manpower, equipment, travel, etc., made available by these expenditures.

Discuss significant changes or modifications in project management, in the staffing pattern, physical facilities, institutional environment, etc.

G. Work Plan and Budget Forecast for Coming Year

Taking into consideration the past year's progress and expenditures and the work remaining to be done over the life of the project present a work plan and budget for the coming year.

1. anticipated accomplishments for the coming year.
2. procedures to be used and activities to be carried out.
3. significant factors that you anticipate that will promote or impede accomplishments.
4. a plan for dissemination and utilization of the expected results of the research in the U.S. and in LDCs as applicable.
5. a budget statement that shows planned expenditures for each of the major inputs (personnel, equipment, travel, LDC involvement, etc.) according to the major accomplishments, or work targets that are planned for the coming year's work.

H. Appendices

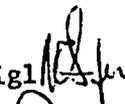
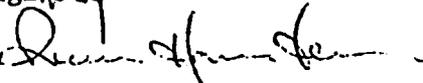
Reports of technical data and analyses (Par. D. 2)

A bibliographic list with abstracts of papers and publications (Par. E. 1)

A list of uses made of research findings and reports (Par. E. 1)

Other appendices as appropriate.

APPROVAL MEMORANDUM

TO: AA/TA, Dr. Erven Long November 12, 1975
THRU: TA/RES, Miloslav Rechcigl 
FROM: TA/N, Irwin Hornstein 
SUBJECT: Small Research Grant
PROJECT TITLE: Effects of Environmental Enrichment on Subsequent
Development of Malnourished Children

A. Problem

In a recently completed retrospective study it was shown that severely malnourished 2-3 year old Korean orphans adopted and raised in the United States reached or exceeded accepted normal values for height, weight, intelligence and achievement. That study involved 141 Korean orphans for whom complete records were available for a minimum of six years.

The proposed project will utilize similar retrospective techniques to study children adopted at 3-6 years of age in order to determine if children in the older age group when introduced to a positive nutritional and stimulative environment can be rehabilitated.

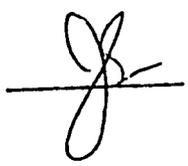
B. Rationale

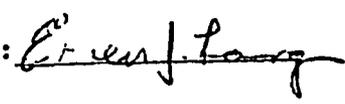
The previous study demonstrated that recovery from early malnutrition (2-3 years old when adopted) is much greater than available data has suggested. From a practical standpoint it appears that early intervention with a program of nutritional and environmental enrichment will result in both physical and mental "catch-up". The basic question that the past study looked at and this proposal attempts to answer is, "How soon must nutritional and environmental improvements be instituted in order to have a positive effect upon previously malnourished children?" The answer to this question has profound practical implications for nutrition programming.

C. Objective

Data obtained from this study will be analyzed in an attempt to ascertain whether a delay in instituting environmental and nutritional enrichment until 3-6 years of age will have an important affect on rehabilitating malnourished children.

- D. Dr. Winick, outstanding in mental development research, has already established performance differences in the 2-3 year old age group concluding that removing children from an environment conducive to malnutrition they perform better than those that remain.
- E. Reviewers of the previous project have strongly urged that the older children be checked for the affect of environmental enrichment.

Clearance: TA/PPU:CFritz 

Approval: 

Disapproval: _____

Date: 6/4/76

MEMORANDUM

May 26, 1972

TO: TA/RUR, Erven J. Long

FROM: TA/N, Martin J. Forman

SUBJECT: Use of "Small Projects Research Program Funds to fund project on "Effects of Environmental Enrichment on Subsequent Development of Malnourished Children"

Dr. Myron Winick, Director of the Institute of Human Nutrition at Columbia University proposes to study the mental and physical development of South Korean orphans who were severely malnourished during the first year(s) of life and were subsequently adopted into middle class Western homes.

Since the inception of an adoption program for orphans from South Korea, several thousand children have been adopted. Many of these children have histories and documented measurements indicating that they were severely malnourished during the first two years of life. Others were well cared for by their parents but put up for adoption for a variety of reasons. Subsequently children from both groups have been adopted into middle class Western homes. These adopted children should now be between eight and fourteen years of age.

The specific aims of the subject proposal are to compare the mental and physical development of three groups of children (a) severely malnourished Korean children who were adopted, (b) normal Korean children who were adopted and (c) the Western siblings of these adopted children from the adopting families. A comparison of this nature could indicate whether severely malnourished children including children who had suffered from marasmus and kwashiorkor could recover normal growth and development if placed at an early age into an "enriched" environment.

There is considerable controversy regarding the effects of malnutrition in the first years of life on subsequent mental and physical development. Studies designed to resolve this question generally attempt to separate socio-economic from nutritional effects. These studies are time consuming and expensive and the probability of success may be marginal.

From an AID and LDC planners viewpoint it is important to know whether a child that has been severely malnourished can become a physically and mentally healthy individual, if at an early age, he is placed in a favorable environment. If this can be done rehabilitation is possible; if this cannot be done the question as to the relative importance of culture vs. nutrition is academic.

We believe this project offers an excellent opportunity to provide us with valuable information on this subject and to provide a basis for deciding on what future directions (if any) our research should take in this area. The made to order situation is ideal and the costs are minimal. We are therefore requesting that approximately \$20,000 be provided from the "Small Research Projects Program" to finance the study.-- A study that affords an unusual opportunity to obtain a valuable return from a modest, one-shot investigation that is basically a quick specific analysis of readily obtainable data.

TA/N:IHornstein:cg:5-26-72

On

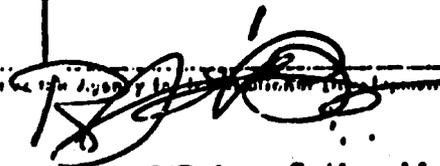
| | | | |
|--|--|--|---|
| AID 1760-1 (9-70) PIO/T | DEPARTMENT OF STATE AGENCY FOR INTERNATIONAL DEVELOPMENT | 1. Cooperating Country Worldwide | Page 1 of 4 pages |
| | PROJECT IMPLEMENTATION ORDER/TECHNICAL SERVICES | 2. PIO/T No. 931-17-560-550-73-3127633 | 3. <input checked="" type="checkbox"/> Original or Amendment No. 77 |
| 4. Project/Activity No. and Title Effects of Environmental Enrichment on Subsequent Development of Malnourished Children | | | |

| | | | |
|--|---|--|--|
| DISTRIBUTION | 5. Appropriation Symbol 72-1121004 | 6.A. Allotment Symbol and Charge 254-31-099-00-22-21 | 6.B. Funds Allotted to: <input checked="" type="checkbox"/> A.I.D./W <input type="checkbox"/> Mission |
| | 7. Obligation Status <input checked="" type="checkbox"/> Administrative Reservation <input type="checkbox"/> Subobligation | | 8. Funding Period (Mo., Day, Yr.) From 7/1/72 to 6/30/73 |
| | 9.A. Service to Start (Mo., Day, Yr.) Between 6/1/72 and _____ | | 9.B. Completion date of Services (Mo., Day, Yr.) 6/30/74 |
| | 10.A. Type of Action <input checked="" type="checkbox"/> A.I.D. Contract <input type="checkbox"/> Cooperating Country Contract <input type="checkbox"/> Participating Agency Service Agreement | | Other: Ref. AID/csd-3679 |
| 10.B. Authorized Agent AID/W | | | |

| Estimated Financing | | (1) | (2) | (3) | (4) |
|--|---------------------------------|---------------|-----------|----------|---------------|
| \$1.00 = | | Previous Year | Increase | Decrease | Total to Date |
| 11. Maximum A.I.D. Financing | A. Dollars | | \$ 11,222 | | \$11,222 |
| | B. U.S.-Owned Local Currency | | | | |
| 12. Cooperating Country Contributions | A. Counterpart | | | | |
| | B. Other | | | | |

| | |
|------------------------|---|
| 13. Mission References | 14. Instructions to Authorized Agent The purpose of this PIO/T is to authorize AID/W to enter into a contract with Columbia University to support research as outlined in the attached Project Statement and as to provide FY 72 funding for the period July 1, 1972 to June 30, 1973. |
|------------------------|---|

| | |
|--|---|
| 15. Clearances -- Show Office Symbol, Signature and Date for all Necessary Clearances. | |
| A. The specifications in the scope of work are technically adequate | B. Funds for the services requested are available |
| C. The scope of work lies within the purview of the initiating office and approved Agency Programs | D. |
| E. | F. |

| | | |
|---|--|-------------------------------------|
| 16. For the cooperating country: The terms and conditions set forth herein are hereby agreed to |  Signature R.J. O'Brien, Contracting Officer | 16. Date of Issue 6/23/72 |
|---|--|-------------------------------------|

| | | | |
|------------------------------------|--|--------------------------|-------------------|
| AID 1380-1X (B-70) PIO/T | Cooperating Country Worldwide | PIO/T No. 931-17-560- | Page 2 of 4 Pages |
| | Project/Activity No. and Title The Effects of Environmental Enrichment on Subsequent Development of Malnourished Children | | |

SCOPE OF WORK

19. Scope of Technical Services

A. Objective for which the Technical Services are to be Used

To compare mental and physical development of 3 groups of children (a) Severely malnourished Korean children who were adopted (b) Normal Korean children who were adopted, and (c) The Western Siblings of these adopted children from the adopting families to indicate whether severely malnourished children could recover normal growth and development if placed at an early age into an "enriched" environment.

B. Description:

See attached Project Summary pages 1-6.

C. Technicians

See budget attachment

| | | | |
|-----------------------|------------------------------|--------------------------------|--|
| (1) (a) <u>Number</u> | (b) <u>Specialized Field</u> | (c) <u>Grade and/or Salary</u> | (d) <u>Duration of Assignment (Man-Months)</u> |
|-----------------------|------------------------------|--------------------------------|--|

(2) Duty Post and Duration of Technicians' Services

(3) Language requirements

N/A

(4) Access to Classified Information

Not required

(5) Dependents Will Will Not Be Permitted to Accompany Technicians

D. Financing of Technical Services

(1) By AID - \$ 11,222

(2) By Cooperating Country - 0

| | | | |
|-----------------------|--|--------------------------|-------------------|
| AID 1880-1X (8-70) | Cooperating Country Worldwide | PIO/T No. 931-17-560- | Page 4 of 4 Pages |
| PIO/T | Project/Activity No. and Title The Effects of Environmental Enrichment on Subsequent Development of Malnourished Children | | |

22. Reports by Contractor or Participating Agency (Indicate type, content and format of reports required, including language to be used if other than English, frequency or timing of reports, and any special requirements)

See Attachment B January 20, 1972 "Guidelines for Preparation of the Research Annual Report: #

Reports

Thirty-five copies of semi-annual reports on scientific progress submitted to AID/W, TA/N, beginning 6 months following the signing of the contract and the annual report beginning 12 months following signing of the contract describing the status of the work in progress; changes in research personnel; management information deemed necessary; and detailed information on expenditures of project funds as well as scientific progress.

23. Background Information (Additional information useful to Authorized Agent and Prospective Contractors or Participating Agency; if necessary cross reference Block 19.C(4) above.)

- (1) Dr. J. Hornstein, Research Officer, TA/N, AID/W 20523
- (2) Dr. Myron Winick, Director, Institute of Human Nutrition, Columbia University, College of Physicians and surgeons, 630 West 168th Street, New York, N.Y. 10032. Telephone No. (212)579-6162

24. Relationship of Contractor or Participating Agency to Cooperating Country and to AID

A. Relationships and Responsibilities

B. Cooperating Country Liaison Official

N/A

C. AID Liaison Officials

TA/N Dr. I. Hornstein or TA/W Dr. M. J. Thomas