

ANNUAL TECHNICAL REPORT
1969-70

IMPROVING CAPACITY OF CUSUSWASH UNIVERSITIES
FOR WATER MANAGEMENT
FOR AGRICULTURE

REPORT NUMBER I
VOLUME II
APPENDIX B
COLORADO STATE UNIVERSITY

Contract No. AID/csd 2460
August 31, 1970

FOREWORD

This is the first consolidated annual report on the section 211 (d) grant made to three of the member universities of the Council of U. S. Universities for Soil and Water Development in Arid and Sub-Humid Areas (CUSUSWASH): the University of Arizona (contract AID/csd 2459), Colorado State University (contract AID/csd 2460), and Utah State University (contract AID/csd 2459), for the purpose of enhancing the competence of these universities in the field of water management for agriculture. These programs were initiated July 1, 1969. CUSUSWASH provides a mechanism for joint planning and review of accomplishments for the three programs and coordinated leadership for the inter-university aspects of the program. Besides the three recipient universities, CUSUSWASH also includes the University of California.

The report consists of two volumes. Volume I contains four parts. Part I deals with the overall CUSUSWASH program, and Parts II, III, and IV report the activities of the three universities. The four parts are under one cover.

Volume II consists of three separate appendices by the three universities. Each appendix is under a separate cover. This report constitutes Appendix B of Volume II.

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Final Proposal

Section I. Final Proposal

Final Proposal

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SECTION I

FINAL PROPOSAL

This proposal is being submitted by CSU to the National Development Bank for aid for an International Development project. The project is to develop a water supply system in a developing country. The project will involve the construction of a dam and the installation of a water supply system. The project will also involve the training of local personnel in the operation and maintenance of the water supply system. The project is expected to have a significant impact on the local economy and the health of the population.

The competence of Colorado State University in these subjects exists in several departments whose staff members constitute the basic capability and interest. The Grant will be used to expand both the depth and breadth of this capability in its application to the less developed countries. Specifically, the grant will be used to support the salary of staff members who will be involved in the project, to provide for the travel and other expenses of the project, and to provide for the purchase of equipment and materials.

As a land grant university, Colorado State University has a long tradition of research, education, and service for agricultural areas and their needs both in the United States and abroad. This Grant will help to expand these activities more effectively and to provide for the less developed areas.

Section I. Final Proposal

The final proposal by CSU to AID for an Institutional Development Grant contains background information on objectives and scope of the program, the operational plan, and budget. A copy of the final proposal entitled, "Optimum Utilization of Water Resources: with special emphasis on Water Delivery and Removal Systems and Relevant Institutional Development," is reproduced in this section.

SECTION I
FINAL PROPOSAL

Final Proposal

For

AID Institutional Development Grant

- I. Title: Optimum Utilization of Water Resources:
with special emphasis on
Water Delivery and Removal Systems and Relevant Institutional
Development
- II. Name of Applicant: Colorado State University
- III. Program Director: Maurice L. Albertson
Linwood L. Hodgdon, Associate Director
- IV. Duration: Five years from date established by the Grant
- V. Amount of the Grant: \$750,000
- VI. Action Officer:

Summary:

This Proposal is one of three being submitted by each of three universities on different aspects of water resources utilization. This Grant will strengthen the already existing competence of Colorado State University in water delivery and removal systems and in development of institutions which are relevant to the various aspects of optimum utilization of water resources.

The competence of Colorado State University in these subjects exists in several departments whose staff members constitute the basic capability and interest. The Grant will be used to expand both the depth and breadth of this capability in its application to the less developed countries. Specifically, the grant would be used to support the salary of staff members and graduate students, and their travel and other expenses related to this activity.

As a Land Grant University, Colorado State University has a long tradition of research, education, and service for agricultural areas and their needs both in the United States and abroad. This Grant will help to expand these activities more effectively into and for the less developed countries.

Background

This proposal is one of three being submitted by each of three universities (University of Arizona, Colorado State University, and Utah State University), which are coordinating their efforts through the Council of U. S. Universities for Soil and Water Development in Arid and Sub-Humid areas -- later referred to as Council. These three universities are among the most competent in the field of water management in the United States.

Colorado State University will emphasize the development of its competence with special emphasis on "water delivery and removal systems and relevant institutional development", Utah State University in "on farm water management" and the University of Arizona, "water shed management". This division of emphasis reflects their respective current special competencies and major field of interest in United States' water management problems. In addition, each of these universities has special geographic experiences and interests in less developed countries. Utah State University is active in several Latin American countries; Arizona is working for AID in Brazil; and Colorado State University is active in Pakistan and Southeast Asia. All three of the universities have contacts and experience in several other locations throughout the less developed world and have general interests in water management problems in less developed countries.

Activities under the Grants to these three universities will be coordinated through the Council in order to maximize development of competencies under the Grants and to facilitate usefulness of these competencies to AID and other appropriate agencies.

Because irrigation agriculture is concentrated in relatively few states, special U.S. competence in irrigation water management is limited to relatively few U. S. universities. However, irrigation is of extreme importance to the agriculture of a large proportion of the less developed countries. Therefore, the increased competence in water management to be created through these Grants for conditions found in the less developed countries, will be of central importance to optimum agricultural development in many of the less developed countries of all the major continents of the world.

Capacity and Commitment

Shortly after the Land Grant Act was signed by President Lincoln, the Land Grant College for Colorado was created in Fort Collins to work with the people in the rural areas through its extension service programs, and to provide higher education for the common man. The Colorado Agricultural Experiment Station was also created at Fort Collins as an integral part of the college to conduct research and experiments on problems confronting the farmer. Colorado State University thus has a long-standing interest in and commitment to the problems of development--particularly in arid agricultural areas where water resources are in short supply or not yet fully developed.

This very practical beginning for what is now Colorado State University has continued to be the central theme, a strong program in research, education, and service. The primary aspect of this program is in Water Resources Development, including agriculture, engineering, watershed management, geology, and various aspects of biological and social sciences. The various water resources programs of research and education at Colorado State University constitute the largest such graduate programs in the world, and a number of these programs are heavily involved in various types of foreign activities, such as the Asian Institute of Technology in Bangkok, and a research program on Water Management in Pakistan.

Well over 100 faculty, and more than 300 graduate students from both the United States and abroad, are now involved in the foregoing programs in the various departments of Colorado State University.

Colorado State University has developed within its institutional structure a Center for Natural Resources, an Office of International Programs and a Center for Latin American Studies. Each of these centers and offices will assist in the development of this project and will be strengthened by their involvement in assisting in the addition of faculty, students, courses, and service activities to broaden the scope of the water resources program at the University as it relates to the less developed countries. These offices and centers have been and are now involved in projects or programs that focus on the professional and technical needs of the less developed countries including specific geographical areas; Latin America, South and Southeast Asia, and Africa.

Colorado State University also has a tradition of working on research, education, and service activities related to water resources with many different agencies of the United States Government and various state agencies, such as:

1. U.S. Geological Survey
2. U.S. Bureau of Public Roads
3. U.S. Agricultural Research Service
4. U.S. Economic Research Service
5. U.S. Soil Conservation Service
6. U.S. Forest Service
7. U.S. Rocky Mountain Forest and Range Experiment Station

8. U.S. Bureau of Reclamation
9. U.S. Bureau of Sport Fisheries and Wildlife
10. U.S. Public Health Service
11. Colorado Water Conservation Board
12. Colorado Cooperative Wildlife Research Unit
13. Colorado Game, Fish, and Parks Department
14. Colorado State Forest Service

Colorado State University has a large number of courses related directly or indirectly to water resources. These courses have been expanded steadily to meet additional requirements in each of the many departments which are interested in the optimum utilization of water resources.

When AID and SEATO were interested in establishing a graduate school in Southeast Asia ten years ago, with special emphasis on water resources, they came to Colorado State University which has taken the responsibility for the initial design of the School and the coordination of the United States contribution ever since that time. The School is located in Bangkok, Thailand and is now known as the Asian Institute of Technology with a continually expanding scope of activities.

Many of the Colorado State University faculty are serving periodically as consultants to various governments, agencies, and other organizations abroad with regard to water resources problems.

Colorado State University has been expanding, at an ever increasing rate, its level of support, both in breadth and in depth, in the various aspects of water resources. Furthermore, it expects to continue this expansion in the future. In addition, in support of this Grant, the University will provide:

1. The office, classroom, laboratory, and library space for faculty, students, and foreign visitors.
2. The basic facilities and equipment required for research, instruction, and service--such as analog and digital computers and certain basic laboratory equipment.
3. The usual administrative and technical supervision and counsel by the various administrators.
4. The advise and assistance of faculty and other staff throughout the University who have special competence which bears on the needs of the program.

Objectives and Scope of Proposed Program

With the funds from the Grant, Colorado State University will improve its level of excellence with respect to planning, development, management, and utilization of water resources with special emphasis on water delivery and removal systems and relevant institutional development related to the needs of the less developed countries. This will be accomplished through the following steps:

1. Expand its professional staff in the various departments of the University which are now involved, or which would like to be involved, in water resources activities related to the needs of the less developed countries.
2. Expand its number of graduate students in these departments from, or interested in, the less developed countries.
3. Expand its departmental research programs and activities related to the needs of the less developed countries.
4. Expand its course offerings in these departments --- including interdisciplinary courses --- which are related to the less developed countries.
5. Expand special activities, and initiate new ones, in the United States and abroad which are related to research, teaching, and service -- e.g. seminars, exchange programs, institutes, conferences, and publications which are concerned with the less developed countries.
6. Help to alleviate the critical shortage of qualified professional personnel with international interests, experience, and expertise, and with cross-cultural insights.
7. Expand its capability to serve in advisory and consulting capacity to various individuals, government agencies, industries, business, and other organizations who have an interest in activities abroad. It would be understood, however, that substantial specific services in this area will be funded by AID and any other sponsoring agencies under separate contractual arrangements.
8. Improve its understanding of the nature of the less developed societies, and find ways and means of assisting them to resolve crucial problems relating to water resources development and management.
9. Develop an exchange of personnel and publications, and other programs of interaction, which will help to establish steady and effective lines of communication between Colorado State University and the less developed countries.

The subject areas of specialization include the following as related to the needs of the less developed countries:

1. Development of water supplies from various sources.
2. Conveyance, delivery, and drainage of water in open and and closed conduits, including rivers, canals, irrigation ditches, tunnels, and pipelines.
3. Storage and use of water in reservoirs, both above and below ground.
4. Control and measurement of water in storage, and water being conveyed either for delivery or for drainage.
5. Control of erosion and sedimentation with respect to storage.
6. Use of wells as a source of water or for storage of water underground.
7. Use of systems engineering for development of optimum solutions to problems of water resources utilization.
8. Understanding social, economic, political, and cultural factors in technological change, and the processes of developmental change.
9. Analysis of prevailing social systems, their structural-functional characteristics within specific less developed countries to determine:
 - a. The kinds of structural changes necessary for maximizing water resource development and management, including the use of necessary new inputs.
 - b. The sources of resistance to these necessary changes, and
 - c. Effective ways of dealing with social resistance
10. To analyze specific organizational and administrative structures for agricultural development in specific less developed countries to determine needed changes for better water utilization in maximizing agricultural production.
11. To conduct economic analyses, including input response studies, and including the analysis of delivery and removal systems, to achieve efficient and economic allocation of water for agricultural purposes in selected areas of the less developed countries.

12. By use of systems analysis, develop case studies analyzing and documenting the above relationships in selected areas of the less developed countries for instructional research, and training purposes in a multidisciplinary setting.

Operational Plan

The details of the operational plan will be developed with the help of an interdisciplinary advisory committee from several departments and areas of administration. The broad aspects of the plan, however, are as follows:

1. Assemble and analyze existing information on water delivery and removal systems related to the less developed countries.
2. Assemble and analyze existing information on development of institutions relevant to optimum utilization of water resources in the less developed countries.
3. Prepare plans for additional research programs which will increase the knowledge of methods, techniques, and procedures for optimizing the utilization of water resources in the less developed countries.
4. Increase the breadth and depth of teaching and educational materials for the subjects of this proposal and for the situations in various less developed countries.
5. Solicit especially well qualified graduate research assistants, from both the United States and the less developed countries, who expect to work in some aspect of international development upon completion of their training.
6. Expand the library collection, especially with respect to the problems of the less developed countries.
7. Develop a program of student and faculty exchange with certain less developed countries.
8. Plan, initiate, and expand an interdisciplinary seminar on development and the interrelationship of the many factors involved in development--especially in the less developed countries.
9. Conduct short courses, institutes, seminars, and other activities to stimulate other personnel to become more deeply and actively involved, and to help in continuing education for those already involved in various aspects of international development.

The first year of this program will be devoted to analysing and developing the details of the total program, integration of on-going programs, selection and orientation of new staff and graduate students and establishing the interdisciplinary components of courses, seminars research projects, and service activities. It is expected that approximately 16% of the total grant will be spent the first year, and that this percentage will gradually increase to more than 20% the fourth and fifth years. Throughout the period of the grant the proportion spent for each line item will remain approximately the same from year to year.

Following the submission of the annual technical report, AID will initiate a review of the activities under the Grant. Such a review will include an evaluation of progress, administrative and financial considerations, and plans for the coming year. The discussion will include ways in which the accomplishment may be utilized in the AID program and other areas where technical assistance may be needed.

Date of Application: 21 April 1969

BUDGET

AID Institutional Development Grant

Five Years Duration

Salaries:	\$280,000.00
Stipends and Dependency Allowances:	\$280,000.00
Travel:	\$ 80,000.00
Equipment:	\$ 40,000.00
Office expense & computer time	\$ 50,000.00
Library and publications	\$ 20,000.00
Total	<u>\$750,000.00</u>

The following is a list of the activities to be carried out during the period of the grant. The activities are listed in order of priority and are grouped into three main categories: (a) research, (b) education, and (c) public relations. The total cost of the grant is estimated to be \$100,000.00. The grant will be used to cover the salaries of the staff, the purchase of equipment, and the cost of travel. The grant will be used to cover the salaries of the staff, the purchase of equipment, and the cost of travel.

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SECTION II

REPRESENTATIVE BIODATA OF CSU STAFF WITH EXPERIENCE RELATED TO GRANT OBJECTIVES

Biographical Data for
Arthur T. Corey

Section II. Representative Biodata of CSU Staff
With Experience Related to Grant Objectives

Consulting competence at CSU was discussed in Volume I, Part III, "Persons Available for Consulting." Representative persons from the departments of Agricultural Engineering, Agronomy, Civil Engineering, Economics, Political Science and Sociology are listed to illustrate the CSU consulting competence. Biographic sketches of those individuals mentioned in "Persons Available for Consulting" are included in this section in the order of their occurrence in that section.

Experience: 14 years on faculty at Colorado State University, including two years spent in Bangkok, Thailand, on Colorado State University Research Foundation grants; with SEATO Graduate School of Engineering

Professional and Honorary Societies:

American Society of Civil Engineers, Member
Soil Science Society of America, Member
Sigma Xi -- Scientific Honorary
Gamma Sigma Delta -- Agricultural Honorary

Professional Experience:

Physicist, Gulf Research and Development Company, 1957-1966
Research concerning multi-phase flow in porous rocks

State in which registered: Colorado

Consulting Work: Consultant for the Petroleum Research Corporation, Denver

Section II. Representative Biobata of CSU Staff
With Experience Related to Grant Objectives

Counseling competence at CSU was discussed in Volume I, Part III, "Persons Available for Counseling." Representative persons from the departments of Agricultural Engineering, Agronomy, Civil Engineering, Economics, Political Science and Sociology are listed to illustrate the CSU counseling competence. Geographic locations of those individuals mentioned in "Persons Available for Counseling" are included in this section in the order of their occurrence in that section.

AGRICULTURAL ENGINEERING

EXPERIENCE RELATED TO GRANT OBJECTIVES

Biographical Data for
Arthur T. Corey
May 1969

Title: Professor and Agricultural Engineer

Age: 50

Education: ASTP, Advanced (diploma, not degree)
Civil Engineering
Pennsylvania State University, 1943

B.S. in Agriculture (soils major)
University of Maryland, 1947

M.S. in Engineering (irrigation option)
Colorado State University, 1949

Ph.D. in Soils (soil physics option)
Rutgers University, 1952

Teaching Experience: 14 years on faculty at Colorado State University,
including two years spent in Bangkok, Thailand, on Colorado State
University Research Foundation contract with SEATO Graduate
School of Engineering

Professional and Honorary Societies:

American Society of Civil Engineers, Member
Soil Science Society of America, Member
Sigma Xi -- Scientific Honorary
Gamma Sigma Delta -- Agricultural Honorary

Professional Experience:

Physicist, Gulf Research and Development Company, 1952-1956
Research concerning multi-phase flow in porous rocks

States in which registered: Colorado

Consulting Work: Consultant for the Petroleum Research Corporation,
Denver

Biographical Data for
William T. Franklin
May 1969

Title: Assistant Professor of Agronomy (Soils)

Birth: 20 April 1923 Place of Birth: Helena, Montana

Education: Montana State University B.S. 1952
Washington State University M.S. 1955
Oregon State University - completed requirements for
Ph.D. degree, except thesis 1965
Thesis requirements expected to be
completed August 1969

Major Research Interests: Salt-affected soil reclamation, water
chemistry, soil minerology

Teaching: 1) Saline and Sodic Soils
2) Principles of Soils for Land Development (chemistry,
salt-affected soils, and water quality sections of USBR
Soil Scientist Training Institute - annual summer
institute)
Both courses at graduate level

Professional and Honorary Societies:

American Society of Agronomy
Soil Science Society of America
Western Soil Science Society of America
Gamma Sigma Delta

Professional Experience:

1952-55 - Graduate Research Assistant, Soils Department,
Washington State University
1955-62 - Assistant Agronomist and Project Leader, Saline-Sodic
Soil Reclamation, San Luis Valley, Colorado, Colorado
Agricultural Experiment Station
1962-64 - Sabbatical and educational leave spent at Oregon State
University
1964-Present - Assistant Professor of Agronomy (Soils)
Colorado State University

Name:

Gaylord V. Skogerboe

Title:

Assistant Professor, Department of
Agricultural Engineering

Birth:

April 1, 1935

Education:

B.S. University of Utah, Salt Lake City, Utah 1958
M.S. University of Utah, Salt Lake City, Utah 1959

Professional Experience

1957 Summer--California Dept. of Water Resources
1958 Waterworks Equipment Company, Salt Lake City, Utah
1959 Transportation Research Command, Fort Eustic, Va.
1960-1963 Utah Water and Power Board, Salt Lake City, Utah
1963-1968 Utah Water Res. Lab., Utah State Univ., Logan, Utah
1968 Agricultural Engineering Department, Colorado State
University, Fort Collins, Colorado

Scientific and Professional Societies:

American Society of Civil Engineers
Sprinkler Irrigation Association
Society of Chi Epsilon
National Society of Professional Engineers
American Water Resources Association
International Association for Hydraulic Research
American Society of Agricultural Engineers
Society of Sigma Xi

Name

Wynn R. Walker

TitleResearch Associate
Department of Agricultural EngineeringBirth

April 29, 1946

Social Security Number

529-62-9376

Education

B.S.	Utah State University, Logan Utah	1969
M.S.	Colorado State University, Fort Collins, Colo.	1970

Professional Experience

Sept. 1967 - March 1969	Student Research Asst., Utah Water Research Laboratory, Utah State University, Logan, Utah
March 1969 - Sept. 1969	Research Associate, Colorado State University, Fort Collins, Colorado
Oct. 1969 - Aug. 1970	Grad. Res. Asst., Colorado State University, Fort Collins, Colorado
Sept. 1970 - Present	Research Associate, Colorado State University, Fort Collins, Colorado

Scientific and Professional Societies

Sigma Tau

Publications

Analysis of Small Water Management Structures in Irrigation Distribution Systems. With Gaylord V. Skogerboe, Brent B. Hacking, and Lloyd H. Austin. Report PRWG 55-1, Utah Water Research Laboratory, College of Engineering, Utah State University, Logan, Utah. June 1969.

Research Topics for Small Irrigation Structures. With G. V. Skogerboe, B. B. Hacking, and L. H. Austin, Proceedings, ASCE, J. of Irri. & Dr. Div. (publication pending).

BUDATA ON ARNOLD KLUTE

to various activities, with a special interest in the field of soil physics.

He has been a member of the American Society of Agronomy since 1952.

He has been a member of the Soil Science Society of America since 1952.

He has been a member of the Soil Physics Society since 1952.

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AGRONOMY

BIODATA ON ARNOLD KLUTE

Dr. Arnold Klute joined the staffs of the Department of Agronomy, CSU, as Professor of Soil Physics, and of the Northern Plains Branch, Soil and Water Conservation Research Division, Agricultural Research Service, as Soil Scientist, on 15 February 1970.

Dr. Klute possesses a highly unusual combination of skills in research and leadership qualities in soil physics. He has earned an international reputation for research on water flow in soil and measurement of soil fluid properties. He has excelled as a teacher and graduate advisor of M.S. and Ph.D. degree students in his previous position at the University of Illinois. He has authored or co-authored some 44 scientific publications and has directed 10 students in their Ph.D. work. In his new position at CSU, Dr. Klute will conduct research on water movement in soils and water conservation by land forming and manipulations of soil properties. His teaching will be in advanced soil physics and he will direct the program of graduate students in this field.

Formal education -- B.S. and M.S. in Soil Science, Michigan State University; Ph.D. in Soil Physics, Cornell University.

Employment -- 1951-1953, Research Engineer, Schlumberger Well Surveying Corporation, Connecticut; 1953 to 1970, Professor of Soil Physics, University of Illinois, Urbana, Illinois; 1970-

Arnold Klute (continued)

Professor of Soil Physics, Colorado State University.

Honors, awards, and invitations -- Fellow, American Society of Agronomy; Member of Sigma Xi; given the National Soil Science Award by the American Society of Agronomy, 1965; invitation lectures, paper on water uptake and root growth at the 1968 Easter School on Root Growth at the University of Nottingham, Loughborough, England - invited speaker on drainage at the American Society of Agricultural Engineers winter meeting, December 1960, at Memphis, Tennessee -- lecture on flow of water in unsaturated soils at the Mass. Institute of Technology, 1967 - lecture on water flow in soils at International Seminar for Hydrology Professors, Univ. of Illinois, 1969; served as Chairman of Div. S-1 on Soil Physics, Soil Science Society of America, 1969; contributing author, American Society of Agronomy Monograph on Methods of Soil Analysis, as well as a chapter in a second monograph entitled, "Irrigation of Agricultural Lands." He has been supported in his past research by the National Science Foundation from the Water Resources Center at the University of Illinois.

Other personal information - Dr. Klute is married and has four children. Served in the Army Signal Corps 1943-1946.

Membership in learned societies or professional organizations - American Society of Agronomy, Soil Science Society of America, International Soil Science Society, Sigma Xi, Phi Kappa Phi, American Association for the Advancement of Science.

BIODATA - JOHN O. REUSS

Early Life: Born October 10, 1927, Great Falls, Montana. Early life spent largely on farms near Lewistown and Forsyth, Montana. Attended Forsyth High School 1940-44.

Family: Married and presently residing at 1116 Robertson in Fort Collins with wife and 3 children and stepson.

Education: 1949 B.S. in Soils from Montana State College (now MSU)
1957-58 M.S. in Soils from Montana State College
1960-61 Attended Utah State University at Logan, Utah as USU research council fellow
1963 Received Ph.D. from USU

Experience: 1949-56 Operated combination irrigated farm and stock ranch near Forsyth.
1956-57 Employed as research technician at Huntley Branch Station, Huntley
1957-60 Instructor and assistant in Soils at Montana State College, Bozeman. Duties included teaching general soils and research in mountain meadow fertility and reclamation of heavy textured saline and sodic soils
1961 Employed at CSU as Extension Soils Specialist and Assistant Agronomist
1965-67 Soil fertility specialist-plant physiologist with CSU Nigeria project in eastern Nigeria
1967- Soil fertility research and teaching at CSU

Awards: Utah State University Research Council Fellowship

Professional Contributions: Research and publications in areas of restoring productivity of subsoil exposed by land leveling, zinc and iron responses in field crops, reclamation of saline and sodic soils, chemical nitrogen transformations in soils, as well as general soil fertility.

Affiliations: American Society of Agronomy; Soil Science Society of America; Western Society of Soil Science; Sigma Xi; Gamma Sigma Delta

WILLARD R. SCHMEHL
Biographical Data

Title: Professor of Agronomy (Soils)

Birthdate: 1918, Arlington, Nebraska

Education: B.S. Colorado State University 1940 Soils
Ph.D. Cornell University 1948 Soils

Major Research Interests: Soil fertility, clay mineralogy, soil management

Teaching: Soil Chemistry and Soil Mineralogy - both courses at graduate level

Professional and Honorary Societies:

American Society of Agronomy
Soil Science Society of America
Clay Minerals Society of America
American Society of Sugar Beet Technologists
Sigma Xi
Gamma Sigma Delta
Phi Kappa Phi

Professional Experience:

1948 - Present Associate and Professor of Agronomy (Soils)
Department of Agronomy
Colorado State University
1954 - 55 Sabbatical leave from Colorado State University
Research at University of Wisconsin
1946 - 48 Graduate Research Assistant
Soils Department
Cornell University
1943 - 46 U.S. Navy
1942 - 43 Hercules Powder Co.
1940 - 42 Graduate Research Assistant
Soils Department
Cornell University

WILLARD R. SCHMIDT
1927 - 1991

Early Life: Born October 10, 1927, Great Falls, Montana. Early years spent largely on his family's farm near Lewis and Clark, Montana. Attended Great Falls High School and Montana State University.

Family: Married and has three children. Resides in Fort Collins with wife and two children.

Education: B.S. Montana State University, 1948; M.S. Montana State University, 1950; Ph.D. Montana State University, 1952.

Professional: 1952-1955, USDA, Soil Conservation Service, Fort Collins, Colorado. 1955-1961, USDA, Soil Conservation Service, Fort Collins, Colorado. 1961-1965, USDA, Soil Conservation Service, Fort Collins, Colorado. 1965-1991, Colorado State University, Fort Collins, Colorado.

CIVIL ENGINEERING

1952-1955, USDA, Soil Conservation Service, Fort Collins, Colorado. 1955-1961, USDA, Soil Conservation Service, Fort Collins, Colorado. 1961-1965, USDA, Soil Conservation Service, Fort Collins, Colorado. 1965-1991, Colorado State University, Fort Collins, Colorado.

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Biography of Dr. Albert J. Albertson

BIOGRAPHICAL DATA

ALBERTSON, M. L., Professor of Civil Engineering, holds a B.S. degree in Civil Engineering from Iowa State College, M.S. and Ph.D. degrees in Hydraulic Engineering from the State University of Iowa, and the degree of Doctor of Physical Sciences from the Universite de Grenoble, France. He has had twenty-five years experience in fluid mechanics, hydraulic engineering, water resources research, and international development engineering. His experience has been primarily with problems involving design and development of hydraulic structures, energy dissipation, alluvial hydraulics, boundary layer studies and diffusion. He pioneered in the development of the use of a wind tunnel to study meteorological and climatological phenomena. He is co-author of a textbook Fluid Mechanics for Engineers, 1960. He has written or collaborated on numerous technical papers, and together with the other authors of the paper, was awarded the American Society of Civil Engineers Emil Hilgard Prize in 1951 for a paper on diffusion of submerged jets.

In 1948 he received the J. C. Stevens Award from the American Society of Civil Engineers for a discussion of a paper on evaporation. In 1964 he received the ASCE Croes Medal, with the co-author, for a paper on "Uniform Water Conveyance Channels in Alluvial Material." He is Principal Investigator for a national Study of the Research Needs and Requirements in Civil Engineering, co-sponsored by the National Science Foundation and the American Society of Civil Engineers. He was Principal Investigator for the Study of Cavitation, Vibration, and Noise in Valves for the Bechtel Corporation and the Metropolitan Water District of Southern California. He is the U. S. Coordinator for the Asian Institute of Technology in Bangkok, Thailand, and was Director of the 1960-61 Congressional study of the "advisability and practicability" of a Peace Corps. He is co-author on the book New Frontiers for American Youth--Perspective on the Peace Corps, 1961.

In 1966 he developed the Hydro-Machinery Laboratory at Colorado State University and directed a major study on cavitation in valves of various types and sizes and under various flow conditions. In 1966 he also conducted studies on transients in pipe lines for the City of Westminster, Colorado and the Johns-Manville Corporation - - the latter resulting in the definition and analysis of waterhammer in pipes occurring under initially static conditions.

Dr. Albertson is a Registered Professional Engineer in Colorado. He joined the staff on 1 September 1947. In 1958, he established the office of the Colorado State University Research Foundation and was its Director until 1963, and in 1963 he established the Office of International Programs, and was Director for one year. In 1964, he left administration to return to full-time research and teaching in fluid mechanics and hydraulic engineering.

MERCER, Albert G. - Civil Engineer

Dr. Mercer received his Bachelor of Applied Science degree at the University of British Columbia and his Master of Science and Doctor of Philosophy degrees at the University of Minnesota.

His experience on hydro-electric and civil engineering work started with the St. Anthony Falls Hydraulic Laboratory in 1954 teaching courses in fluid mechanics and supervising model studies on the Derbendi Khan Dam in Iraq, Karadj Dam in Iran, Mangla Dam in Pakistan, Guri Dam in Venezuela, Brokopondo Dam in Surinam and the Wanapum and Priest Rapids Dams in the United States. He was also employed in Pakistan on the Indus Basin Projects for two years prior to joining the International Power and Engineering Consultant Firm in Vancouver B. C. At the IPEC he was head of the Hydraulics and Hydrology Section of the Hydro-Electric Division and was primarily engaged in the design of the hydraulic features of the Portage Mountain and Site 1 Developments on the Peace River.

He is a registered professional engineer in the Province of British Columbia and a Member of the American Society of Civil Engineers.

Biography of Dr. Hubert J. Morel-Seytoux

Associate Professor of Civil Engineering. He holds a M. S. degree in Structural Engineering from Ecole Nationale des Ponts et Chaussées, Paris, France, (July 1956) and a Ph. D. in Civil Engineering from Stanford University (April 1962) with a major in hydraulics and a minor in mathematics. His experience includes - Military Operations Research at Ecole Supérieure de Guerre, Paris, France from November 1960 to April 1962; Research Engineer with Chevron Research Company in Oil Production Research Section from June 1962 to October 1966. He is a member of the American Society of Civil Engineers, the Society of Petroleum Engineers (American Institute of Mining, Metallurgical and Petroleum Engineers), the American Meteorological Society, the American Geophysical Union, and the Soil Science Society of America (American Society of Agronomy).

Professor of Civil Engineering and
RICHARDSON, E. V.,⁴Administrative Engineer, Engineering Research Center,
Colorado State University. He holds B.S., M.S., and Ph.D degrees
in Civil Engineering from Colorado State University. His major fields
of interest are experimental fluid mechanics, open channel flow,
fluvial hydraulics and stream morphology. He has conducted water
resources investigations in almost all the Western United States,
research on sediment transport and resistance to flow in sand channels,
model studies of control structures for sand channels and investigations
on methods of measuring the discharge of water and sediment in natural
streams. He has served as a consultant to the U. S. Geological Survey,
Kentucky Highway Department, U. S. Park Service, Army Corps of Engineers,
and private irrigation companies on alluvial channel and water measure-
ment problems. He is presently active in the study of the characteristics
of turbulence in open-channel flow.

He has authored or co-authored numerous papers and reports.
These papers have been on sediment observations, water resources
problems, mechanics of flow in alluvial channels, fluid mechanics,
open channel flow, and turbulence. He is a member of Sigma Xi, Inter-
national Association of Scientific Hydrology, UNESCO Earthquake
Reconnaissance Mission, and American Society of Civil Engineers. He
received the American Society of Civil Engineers J. C. Stevens Award
in 1961 for discussion of a paper, "Resistance Properties of Sediment-
Laden Streams," and is Chairman of the Sedimentation Committee of the
Hydraulics Division, American Society of Civil Engineers.

Vita

Name: Edmund F. Schulz

Birthplace: Brighton, Colorado, USA, Birthdate: 19 March 1921

Present Position: Associate Professor of Civil Engineering

Academic Qualifications:

1. Bachelor of Science in Civil Engineering
Colorado State College, Fort Collins, Colorado 1943
2. Master of Science in Irrigation Engineering,
Colorado A and M College, Fort Collins, Colorado 1953

Military Experience:

1. U. S. Navy active duty 1944 to 1946, Line Officer
Pacific Area.
2. Active in U. S. Naval Research Reserve Activities 1950
to 1963; 1969 to date.

Professional Experience:

- a. Lockheed Aircraft Corporation, Burbank, California, 1943-1944
 1. Flight Test Engineer in experimental flight testing of new aircraft.
 2. Performance evaluation of experimental aircraft.
 3. Design of tests on new aircraft systems and components.
 4. Preparation of evaluation reports.
- b. Bureau of Reclamation in Denver, Colorado, Washington, D. C.,
and Boulder City, Nevada, USA, 1946-1950.
 1. Flood Hydrologist in Branch of Project Planning
 2. Design Storm Studies in connection with a nation-wide
Hydrometeorological Study
 3. Operation study in connection with the construction and
operation of a dam on the lower Colorado River by the
United States and Mexico
- c. Colorado State University, Department of Civil Engineering,
Fort Collins, Colorado, 1950-1963; 1969 to date
 1. Associate Professor of Civil Engineering taught courses
in Hydrology

Edmund F. Schulz (continued)

2. Participated in research in natural and deliberate recharging of natural aquifers
 3. Participated in research in Floods from Small Watersheds
 4. Development of a library of recorded flood events from small watersheds
 5. Developed a facility for testing seaworthiness of model ship hulls. (1953-1960)
 6. Supervised research in seaworthiness of model ship hulls as an outgrowth of Naval Research Reserve activity.
- d. University of the Witwatersrand, Johannesburg, South Africa, 1963-1965.
1. Recipient of a two-year grant under the Exchange-of-Persons Program of the U. S. Department of State.
 2. Research on applications of simulation methods on a digital computer for planning of water resources.
 3. Assist in development of research program on floods from watersheds.
- e. ASIAN INSTITUTE OF TECHNOLOGY (formerly SEATO Graduate School of Engineering), Bangkok, Thailand, 1965-1969.
1. Responsible for teaching and research program in Hydrology.
 2. Development of curriculum in Water Resources.
 3. Formerly Chairman of the Hydraulics Department. Planning of new study programs in Hydraulics Department.
 4. Formerly Chairman of Computer Committee which manages and controls the use of various digital computers available to the Graduate School. Plan for installation of new IBM 1130 computer for full time use at the Graduate School. Plan for the development and management of a new large scale computing facility at the Graduate School.
 5. Chairman of Library Advisory Committee which helped to plan computerized phases of Library operation. Helped to plan library at new AIT Building Site.

Membership in Societies:

American Geophysical Union, American Meteorological Society, American Society of Civil Engineers, American Water Resources Association, Colorado Water Congress, South African Geographical Society, South African Association for the Advancement of Science, Member of Sigma Xi, Listed in Who's Who in Engineering.

SIMONS, Daryl B.

Associate Dean for Engineering Research and Professor of Civil Engineering at Colorado State University. He holds a B.S. degree in Civil Engineering from Utah State (1947), an M.S. degree in Civil Engineering from Utah State (1948), and a Ph.D. degree from Colorado State University (1957). He has several years experience in teaching, consulting work, and research. He has written over 100 papers and is co-author of a Fluid Mechanics text and has written chapters for three other texts. His principal fields of interest are: hydraulics, river mechanics, hydraulic and river modeling, channel design and stabilization, hydrology and water resources development. He was a professor at the University of Wyoming from 1948 to 1957. In 1957 he accepted a job as Project Chief for the U. S. Geological Survey at Fort Collins to conduct research in fluvial hydraulics with emphasis on resistance to flow and sediment transport and erosion control and the design of hydraulic structures. In 1963 he accepted his present positions with Colorado State University.

Dr. Simons received the J. C. Stevens Award in 1960 and the Croes Award in 1964 from the American Society of Civil Engineers. He has continuously applied the results of his research to practical problems. He has served as hydraulic consultant on several important engineering projects for the United Nations, the Corps of Engineers and others dealing with river mechanics, flood control and navigation problems. He has served on several national and international panels delegated to outline research needs in hydraulics, irrigation and drainage. He is a registered professional engineer and is a member of several professional societies such as, ASCE, AGU, IAHR and ICID.

SMITH, George L., Assistant Civil Engineer and Assistant Professor of Civil Engineering, received his B.S. in Civil Engineering from the University of New Mexico (1947), his M.S. in Irrigation Engineering from Colorado State University (1957). He spent one year at the University of Iowa doing graduate work in Hydraulics and Fluid Mechanics. From 1949 to 1955 he was employed by the Corps of Engineers at Vicksburg, Mississippi, as a hydraulic engineer and as a hydrologist. His experience with the Corps of Engineers included design of both model and prototype flood control structures for the Mississippi River and development of statistical methods for determination of flood frequencies on the main stem of the Mississippi River. His experience at Colorado State University has included research on scour control at cantilevered culvert outlets by preshaped, armorplated stilling basins, scour control in alluvial channels by graded riprap, diffusion of submerged jets impinging upon a normal smooth boundary, and the design of hydraulic laboratory equipment for undergraduate and graduate instruction and an 800 ft. circular conduit with variable slope and roughness for studying unsteady flow in storm drains. He was a research associate on the study of the magnitude and frequency of floods from small watersheds in semi-arid areas. At present he is assisting in the development of an out-door research laboratory to include the following facilities: A hydrology model for simulating rainfall and runoff patterns, a dam breach and flood routing model, and a pumping plant having a capacity of 100 cfs. He is a Registered Professional Engineer in Mississippi and Colorado. He is also a Registered Land Surveyor in Colorado.

BIOGRAPHY OF VUJICA YEVJEVICH

Graduated in 1936 from the University of Belgrade, Yugoslavia, and in 1939 from the School for Hydraulic Engineers, Grenoble, France. Obtained Doctor's degree in 1955 from Serbian Academy of Science, Belgrade. From 1946-1957 he taught at the University of Belgrade, and was involved in various engineering activities, consulting included, but primarily in research work in hydrology, hydraulics, hydraulic engineering and water resources development in Yugoslavia and in other countries. Since February 1958 he worked in the United States, first on various research projects with the U.S. National Bureau of Standards and U.S. Geological Survey, and then from September 1960 he became associated with Colorado State University, Fort Collins, Colorado, as Professor of Civil Engineering. Four of his books and about 90 of his papers and reports have been published. He is presently directing the graduate and research program in Hydrology in the Civil Engineering Department at Colorado State University. He is a fellow of American Society of Civil Engineers, and a member of American Geophysical Union, International Association for Hydraulic Research and Sigma-Xi Society.

Louisiana State University, M.A. in Latin American Studies 1963
(1962-63) (economics, sociology, and geography)
Thesis: "The Central American Common Market"

Vanderbilt University, M.D. in Economics 1955
Fields of Concentration: Economic Development, Economic Theory,
Statistics, Agriculture Economics, Latin American Studies minor

Dissertation: "Devaluations, Inflation, and Relative Price Changes
for Agricultural Exports: Argentina, 1938-1954"

Supervisor: William N. Mitchell, Dept. of Economics, Vanderbilt Univ.

Other Graduate Members and References: Professors Vernon Post, Nicholas Georgescu-Roegen, and James S. Worley III are members of Department of Economics, Vanderbilt University.

Awarards: Fulbright-National Defense Education Act Fellow, dissertation research in Argentina (1966-67).

1961-62 sponsored ORNL/CSU Management Research Project (contract 1961)

Graduated in 1911 from the University of Colorado, Yergens was in
 1912 from the University of Colorado, Yergens was in
 Doctor's degree in 1917 from the University of Colorado, Yergens was
 1944-1955 he taught at the University of Colorado, and was involved in various
 engineering activities, especially in the field of
 as hydrology, hydraulics, and water resources engineering.
 his researches in the field of water resources engineering
 in Yergens and in other countries. Since February 1955 he worked in the
 United States Geological Survey, and then from 1955 to 1960
 of Standards and Statistics Division, and then from 1960 to 1965
 his main responsibilities in the field of water resources engineering
 became associated with Colorado State University, Fort Collins, Colorado, as
 Professor of Hydrology and Water Resources Engineering in the
 Department of Hydrology and Water Resources Engineering, Fort Collins, Colorado.

ECONOMICS

and reports have been published in the field of hydrology and
 water resources engineering. His researches in the field of hydrology
 research program in the Civil Engineering Department at Colorado
 State University. He is a Fellow of the American Society of Civil Engineers, and
 a member of the American Society of Mechanical Engineers, the American Society of
 Engineers, and the American Society of Professional Engineers.
 He has been a member of the American Society of Professional Engineers since 1911
 and of the American Society of Mechanical Engineers since 1912.
 He has been a member of the American Society of Civil Engineers since 1913.
 He has been a member of the American Society of Professional Engineers since 1914.
 He has been a member of the American Society of Mechanical Engineers since 1915.
 He has been a member of the American Society of Civil Engineers since 1916.
 He has been a member of the American Society of Professional Engineers since 1917.
 He has been a member of the American Society of Mechanical Engineers since 1918.
 He has been a member of the American Society of Civil Engineers since 1919.
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 He has been a member of the American Society of Professional Engineers since 1959.
 He has been a member of the American Society of Mechanical Engineers since 1960.

Huntley Hedges Biggs
(continued)

AID-211 (d) Water Resources Institutional Grant to participate in "International Interdisciplinary Seminar on Water Resources Management" (1969-1971).

CUSUSWASH Water Management Research Project to conduct "Economic Analysis of On-Farm Input Use in West Pakistan" (1970-1971).

University activities:

Chairman of interdisciplinary seminar sponsored by Center for Latin American Studies - "Latin American Development Problems and Issues" (spring 1970).

Non-Salary Benefits Committee, and
Center for Environmental Resources.

Professional and honorary memberships:

American Economics Association
Latin American Studies Association
Rocky Mountain Social Science Association
Beta Gamma Sigma
Omicron Delta Epsilon

Scholarships and Assistantships:

Louisiana State University: University Fellowship 1963-64.
Vanderbilt University: NDEA, Title VI Fellowship, 1964-65, 1965-66.
Fulbright-NDEA related Fellowship 1966-67, doctoral research in Buenos Aires, Argentina.
Instructor-Research Assistant, Vanderbilt University, 1967-68
Instructed "Latin American Economic Development" (one semester) and research (one semester).

August 1970

L. M. Hartman
Department of Economics
Professor

Birth: May 19, 1924

Place of Birth: Osborne, Kansas

Preferred fields: Institutional Change
Natural Resource Economics

Educational history:

B. S.	Colorado State University	1954
M. S.	Colorado State University	1956
Ph. D.	North Carolina State University	1960

Professional Employment:

(1) Employer:	Colorado State University Fort Collins, Colorado
Duties:	Teaching and Research
Dates:	1960 to present

On sabbatical leave for 12 months (1968-69) as Research Associate, Center for International Affairs, Harvard University.

Honorary and professional organizations:

American Economic Association
American Farm Economic Association

Awards:

American Agricultural Economics Association award for published research in 1961 and 1962 on studies jointly authored with G. S. Tolley.

Vita for
Melvin D. Skold
January, 1969

Personal:

Married, three children, ages 9, 7, and 3
Born at Haxtun, Colorado, December 10, 1936

Education:

B. S. Colorado State University, 1958 Agricultural Economics
M. S. Colorado State University, 1959 Economics
Ph. D. Iowa State University, 1963 Agricultural Economics

Professional Experience:

1958-59 Graduate Assistant, Colorado State University
1959-60 Graduate Assistant, Iowa State University
1960-63 Research Associate, Iowa State University
1963-64 Agricultural Economist, U. S. Department of Agriculture,
Economic Research Service, Lincoln, Nebraska
1965-67 Assistant Professor, Department of Economics,
Kansas State University
Since 2/1/67 Assistant Professor, Department of Economics,
Colorado State University. Promoted to Associate
Professor September, 1968.

Areas of Specialization:

Agricultural Economics
Regional Economics
Resource Economics

Professional Societies:

American Economic Association
American Farm Economics Association
Regional Science Association
Midwest Economics Association
Western Farm Economics Association

Honoraries:

Phi Kappa Phi
Pi Gamma Mu
Gamma Sigma Delta

Special Honors:

Selected for Travel Grant to attend the International Conference
of Agricultural Economists, Sydney, Australia, in August 1967.

15-4941

Assistant Professor, Department of Economics, Colorado State University

Current Position: Director, Office of International Programs, Colorado State University, Fort Collins, Colorado. As a coordinator of the program, he is responsible for foreign students and faculty. He has supervised numerous graduate students in international education.

45-4911

Assistant Professor, Department of Economics, Colorado State University

Previous Experience: After early experience as an accountant and auditor, he worked for the State of Colorado in various capacities. He has been in the field of international trade and economic development for many years. He has worked for the State of Colorado in various capacities. He has been in the field of international trade and economic development for many years. He has worked for the State of Colorado in various capacities.

44-4911

Assistant Professor, Department of Economics, Colorado State University

With overseas, developed and maintained contacts in business, industry, banking and government. He has supervised numerous graduate students in international trade and economic development. He has been in the field of international trade and economic development for many years.

44-4911

Assistant Professor, Department of Economics, Colorado State University

OFFICE OF

INTERNATIONAL PROGRAMS

1965-68

Associate Director, Office of International Programs, Colorado State University

1962-64

Political Officer, American Embassy, San Salvador, El Salvador

1961-62

Economic, Department of State, Washington, D.C. duties involved contacts with visiting Latin American officials.

1958-61

Political Officer, American Embassy, Tegucigalpa, Honduras

1956-58

Political Officer, American Embassy, Rio de Janeiro, Brazil

1954-56

Political Officer, American Embassy, Havana, Cuba

1951-54

Department of State, Washington, D.C. duties involved contacts with visiting Latin American officials.

Robert E. Whedbee

Current Position: Director, Office of International Programs, Colorado State University, Fort Collins, Colorado 80521. Acts as a coordinator of the international programs of the University related to foreign students and foreign visitors, overseas projects, study abroad and international education.

Previous Experience: After early experience as an accountant and auditor, became an economist with the United States Government. Many years of experience overseas in economic and commercial work, political reporting, negotiation and administrative operations. Extensive experience in Washington in research and analysis relating to Latin America and Spain.

While overseas, developed and maintained contacts in business, industry, banking and government to acquire information and background data for report and for policy recommendations. Supervised the economic or political reporting at various posts in Latin America.

Employment Chronology:

- | | |
|---------|--|
| 1968-69 | Acting Director, Office of International Programs, Colorado State University. Member of the Graduate School Faculty in the Department of Economics. Faculty Adviser to the Latin American Students Organization. |
| 1966-68 | Associate Director, Office of International Programs, Colorado State University. |
| 1964-65 | Economist, Department of State; Washington Assignments; detailed to Department of the Army as a consultant on politico-economic effects of foreign military assistance. |
| 1962-64 | Political Officer, American Embassy, San Salvador, El Salvador. |
| 1961-62 | Economist, Department of State; Washington Assignments; duties involved contacts with visiting Latin American officials, industrialists and businessmen concerning economic development and planning. |
| 1958-61 | Political Officer, American Embassy, Tegucigalpa, Honduras. |
| 1956-58 | Political Officer, American Embassy, Rio de Janeiro, Brazil |
| 1954-56 | Political Officer, American Embassy, Havana, Cuba. |
| 1951-54 | Deputy Chief, Latin American Branch, Foreign Policy Coordination Staff, National Production Authority, Department of Commerce, Washington, D. C. |

1949-51 Second Secretary and Financial Officer, American Embassy, Santiago, Chile.

1946-48 Second Secretary and Financial Officer, American Embassy, Madrid, Spain.

1945-46 Administrative Officer, American Embassy, Madrid, Spain.

1943-45 Economic Analyst, American Embassy, Madrid, Spain.

1941-43 Junior Economic Analyst, American Embassy, Tegucigalpa, Honduras.

1941 Accountant, U. S. Engineers, Trinidad, BWI.

1939-41 Junior Auditor, General Accounting Office, Washington, D. C.

Education:

1934-37 Wichita University; Wichita, Kansas.

1937-38 University of Kansas, Lawrence, Kansas; B. A. degree.

1939-41 George Washington University, Washington, D. C., graduate study in Economics.

1948-49 Harvard University, Cambridge, Mass., State Department fellowship for graduate work in Economics.

Languages: Spanish, near bi-lingual; Portuguese, fluent; French, reading knowledge.

Publications:

"Economic Tug of War in Spain", Foreign Commerce Weekly, 1944

"Franco Spain in Crisis", Foreign Commerce Weekly, 1945, and many other publications in Commerce Department releases of a similar nature.

"Foreign Markets", Colorado Agricultural Roundup, Cooperative Extension Service, CSU, Fort Collins, Colorado, 1970.

Societies:

American Foreign Service Association
The Academy of Political Science
Latin American Studies Association
International Studies Association
Association of U. S. University Directors of International Agricultural Programs
National Association of Foreign Student Affairs

Personal:

Born: April 30, 1915 in Kansas
Married, with 2 daughters
Health Excellent
References available on request

1948-51 Second Secretary and Financial Officer, American Embassy, Santiago, Chile.

1943-45 Economic Analyst, American Embassy, Madrid, Spain.

1939-41 Junior Editor, Foreign Accounting Office, Washington, D. C.

POLITICAL SCIENCE

1948-49 Harvard University, Cambridge, Massachusetts.

1947-48 George Washington University, Washington, D. C.

1946-47 Harvard University, Cambridge, Massachusetts.

1945-46 Harvard University, Cambridge, Massachusetts.

1944-45 Harvard University, Cambridge, Massachusetts.

1943-44 Harvard University, Cambridge, Massachusetts.

1942-43 Harvard University, Cambridge, Massachusetts.

1941-42 Harvard University, Cambridge, Massachusetts.

1940-41 Harvard University, Cambridge, Massachusetts.

1939-40 Harvard University, Cambridge, Massachusetts.

1938-39 Harvard University, Cambridge, Massachusetts.

1937-38 Harvard University, Cambridge, Massachusetts.

1936-37 Harvard University, Cambridge, Massachusetts.

1935-36 Harvard University, Cambridge, Massachusetts.

1934-35 Harvard University, Cambridge, Massachusetts.

1933-34 Harvard University, Cambridge, Massachusetts.

1932-33 Harvard University, Cambridge, Massachusetts.

1931-32 Harvard University, Cambridge, Massachusetts.

1930-31 Harvard University, Cambridge, Massachusetts.

1929-30 Harvard University, Cambridge, Massachusetts.

1928-29 Harvard University, Cambridge, Massachusetts.

1927-28 Harvard University, Cambridge, Massachusetts.

1926-27 Harvard University, Cambridge, Massachusetts.

1925-26 Harvard University, Cambridge, Massachusetts.

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1922-23 Harvard University, Cambridge, Massachusetts.

1921-22 Harvard University, Cambridge, Massachusetts.

1920-21 Harvard University, Cambridge, Massachusetts.

1919-20 Harvard University, Cambridge, Massachusetts.

1918-19 Harvard University, Cambridge, Massachusetts.

1917-18 Harvard University, Cambridge, Massachusetts.

1916-17 Harvard University, Cambridge, Massachusetts.

1915-16 Harvard University, Cambridge, Massachusetts.

1914-15 Harvard University, Cambridge, Massachusetts.

1913-14 Harvard University, Cambridge, Massachusetts.

1912-13 Harvard University, Cambridge, Massachusetts.

1911-12 Harvard University, Cambridge, Massachusetts.

1910-11 Harvard University, Cambridge, Massachusetts.

1909-10 Harvard University, Cambridge, Massachusetts.

1908-09 Harvard University, Cambridge, Massachusetts.

1907-08 Harvard University, Cambridge, Massachusetts.

1906-07 Harvard University, Cambridge, Massachusetts.

1905-06 Harvard University, Cambridge, Massachusetts.

1904-05 Harvard University, Cambridge, Massachusetts.

1903-04 Harvard University, Cambridge, Massachusetts.

1902-03 Harvard University, Cambridge, Massachusetts.

1901-02 Harvard University, Cambridge, Massachusetts.

1900-01 Harvard University, Cambridge, Massachusetts.

Curriculum Vitae

Henry P. Caulfield, Jr.

Born

New York City, November 25, 1915

Education

Los Angeles City Schools; graduate of Hollywood High School, June 1935

California Institute of Technology, Pasadena, California -- 1935-1936

Institute Scholarship

Fields of concentration: Physics, Chemistry and Mathematics

Lingnan University, Canton, China -- 1936-37

Foreign Exchange Scholarship

Fields of concentration: Science, Social Anthropology, and Chinese History

Harvard College -- 1938-1940

S. B. degree cum laude, June 1940

Fields of concentration: Economics and Government

Harvard University, Graduate School of Public Administration --
February 1948-March 1950

Worked toward joint degree in Political Economy and Government

Fields of concentration: Political Theory, Economic Theory,
Constitutional Law and Industrial Organization and Control

MPA degree, June 1949

Passed General Examination, May 1950; Thesis not completed

Oxford University, Oxford, England; Summer School -- 1948

Experience

Economist, Works Projects Administration, Research Division,
Washington, D. C. -- July 1940-December 1941

Naval Officer (Ensign to Lieutenant Commander)

United State Navy, assigned to Office of the Secretary

Navy Department, Washington, D. C. -- January 1942-December 1945

Received Secretary's Commendation Award

Executive Assistant to Director, Office of War Mobilization and
Reconversion, Washington, D. C. -- January-February, 1946

H. P. Caulfield (continued)

Instructor in Economics, Williams College, Williamstown, Massachusetts--
March-September 1946

Assistant for International Affairs to the Assistant Director for
Statistical Standards, Bureau of the Budget, Washington, D. C. --
October 1946-January 1948

Director, International Economic and Statistical Education Program,
International Statistical Institute, London, England -- July 1950-June

Economist, Office of the Secretary, Department of the Interior,
Washington, D. C. -- June 1951-September 1955

Research Associate on Energy Policy, Resources for the Future,
Washington, D. C. -- September 1955-February 1961

Assistant Director and then Director, Resources Program Staff,
Office of the Secretary, Department of the Interior, Washington, D. C.
February 1961-April 1966

Executive Director, Water Resources Council, Washington, D. C.
April 1966 to September 1969

Professor of Political Science, Colorado State University, Ft.
Collins, Colorado, September 1969 to present

H. P. Caulfield (continued)

Membership -- Professional Societies

American Political Science Association
American Society for Public Administration
American Economic Association
American Water Works Association
American Water Resources Association
American Association for the Advancement of Society

Professional Committees

Member, Scientific Advisory Committee, Rocky Mountain Center
on Environment, 1970
Member, Committee on Desert and Arid Zone Research, Southwestern
and Rocky Mountain Division of the American Association for the
Advancement of Science, 1970-71
Chairman, Water Resources Committee, Environmental Resources Center,
Colorado State University, 1969-present
Member, Steering Committee on J.F.K. Airport Expansion Study,
Environmental Studies Board, National Academy of Sciences, Summer 1970
Panel Leader, Research Conference on the Evaluation Process in
Water Resources Association, at University of Wisconsin, Milwaukee,
June 1970

Other Affiliations

National Parks Association
Sierra Club
Wilderness Society
Izaak Walton League
National Wildlife Federation
American Forestry Association
Harvard Club of Washington

BIOGRAPHIC DATA

Name: Garth N. Jones Date: November, 1969
Position: Senior Specialist Project: Scholar in Residence
East-West Center Location: Honolulu, Hawaii
Honolulu, Hawaii

BIOGRAPHIC DATE: DAB: February 25, 1925; Salt Lake City, Utah
Married, Three Sons

EDUCATION:

1943-47 Utah State University - B.S., Political Science and
Economics
1947-48 University of Utah - M.A., Political Science and
Economics
1948-49 Pennsylvania State University
1950-51 University of Utah - Ph.D., (1954) Political Science
and Economics
Also, University of Utah Special Certificate,
Public Administration (1948)

CAREER

9/69 - 6/70 Senior Specialist, East-West Center, Honolulu, Hawaii.
Invited as one of twenty-four Asian, European, and
American scholars to spend nine months at the East-West
Center researching and writing upon particularly the two
following topics:
1. "Role of Bureaucracy in Planned Development: A Compar-
ative Study of Indonesia and Pakistan."
2. "Planned Organizational Change: A Study of the Change
Process through Marginal Utility and Social Exchange
Analyses."
6/67 - 8/69 Chief, Public Administration Division FSRO-2. Pakistan
Responsible for supervising a broadly designed technical
assistance in public administration which centered on
three development goals:
(a) strengthening economic decisionmaking,
(b) strengthening key development agencies, and
(c) strengthening local government
Supervised five contract operations as well as direct
agency activities. These included 25-30 professionals.
10/64 - 6/67 Chief of Party, University of Southern California
Contract in Pakistan. Associate Professor.

From October 1964 to June 1965 USC Party Representative in Lahore with the primary responsibility of developing an academic program at the Department of Administrative Science, University of the Panjab. On July 1, 1965 appointed Chief of Party of the Contract. The contract provided for assistance to three National Institutes of Public Administration, located at Karachi, Dacca, and Lahore; Department of Administrative Science at the University of the Panjab, and the Civil Service Academy at Lahore.

- 9/61 - 10/64 Associate Professor
School of Public Administration, USC, Los Angeles. Position equally divided between teaching and administrative activities. Subjects of instruction Finance Administration, Local Government Administration, Modernization of Administration in Emerging Countries, and Organizational Theory and Behavior. Faculty Student Advisor for the Pakistan Project. Also served as Peace Corps Liaison Coordinator.
- 12/56 - 2/62 Public Administration Advisor, FSRO-3 US/AID Indonesia, Djakarta. Planned and implemented an administrative management educational and training program; initiated and assisted in carrying out management improvement projects for more efficient operation of provincial and local governments. Projects were undertaken to establish a bureau of reconstruction and development, bureau of statistics and planning, and an integrated department of finance. In the absence of the Chief, assumed his responsibilities; prepared and implemented necessary program and related documents; and undertook reconnaissance and research type activities as to the nature and scope of the Indonesian Public Administration, particularly in the field of fiscal and financial management.
- 8/53 - 12/56 Assistant Professor (Public Administration)
Brigham Young University, Provo, Utah.
Delivered lectures in Public Administration, Municipal Administration, American Heritage and related subjects. During 1955-56 taught a Personnel Management course to Air Force Reserve Officers at Clearfield, Utah. Also served as Research Associate, Local Government Survey Commission. Acted as consultant to Utah Municipal League and Utah State Association of County Officials.
- 4/53-- 9/54 Research Consultant
Utah Foundation, Salt Lake
Utah Foundation is private research organization concerned with government problems. Prepared studies on public finance, tax administration, and state and local government organization and administration.

- 12/51 - 4/53 Food and Drug Inspector
Department of Agriculture, Salt Lake City, Utah
Responsible for enforcement of pure food and drug laws of State of Utah entailing review of written reports from seven regional food and drug inspectors; determination of measures to be taken against business concerns or persons who violated the law; inspection of food and drug processing plants; and preparation of monthly and periodic reports for submission to Board of Agriculture and special advisory bodies.
- 5/51 - 12/51 Administrative Assistant to District Administrator, Ponape District, Eastern Carolines, Department of Interior. Responsible for establishment of records and record keeping systems; gathering data, doing research and performing other related activities for preparation of economic and other reports; assisting heads of other units in developing necessary report forms; routing of all incoming mail; preparation and review of correspondence relating to administrative matters. Handled all necessary local personnel action and served as reviewing officer for efficiency rating system. Assisted in preparation of budgets; made field trips; and in absence of District Administrator, supervised the district.
- 6/50 - 4/51 Research Specialist and Consultant, Utah Municipal League and Utah State Assoc. of County Officers and Officials, Salt Lake City, Utah
Periodically called upon to make studies and advise on various legal and administrative problems confronting local governments.
- 9/49 - 6/50 Research and Teaching (Staff Member), University of Utah
- 9/48 - 6/49 Teaching and Research (Staff Member), Political Science Department, Pennsylvania State College
- 9/47 - 6/48 Research Assistant
Political Science Department
University of Utah
- 4/48 - 8/48 Research Specialist
County of Salt Lake, Salt Lake City, Utah
Employed to make studies on "Daily cost of Patients in Salt Lake County Hospital" and "Record Management in County Recorder's Offices."

HONORS AND FELLOWSHIPS

a. Utah State, Logan, Utah

1. Sears Scholarship, 1943-44
2. Selected for Who's Who in American Colleges and Universities, 1947
3. Elected Blue Key Fraternity, 1946

- b. University of Utah
 1. Graduate Research Fellowship in Political Science, 1947-48
 2. Graduate and Teaching Fellowships, 1949-50
- c. Pennsylvania State University
 1. Graduate Teaching Fellowship in Political Science, 1948-49
- d. University of Southern California
 1. Professor of the Year, School of Public Administration, 1962
- e. East-West Center, Honolulu, Hawaii
 1. Senior Specialist, September 1969-June 1970

TEACHING AND RESEARCH INTERESTS

1. Teaching:

Organizational Theory and Behavior
Comperative and Development Administration
Public Finance Administration
Local Government Administration

2. Research Interests:

Planned Organizational Change
Comparative Study of Pakistan and Indonesian Bureaucracy²⁰
Modernization of Financial Management

RECENT GRANTS

1. Comparative Administration Group of the American Society for Public Administration, Grant of \$3,000 to study planned organizational change.
2. Research Committee, University of Southern California Grant of \$500 to study planned organizational change.
3. East-West Center, Honolulu, Hawaii. Provides assistance in services valued \$5,000 besides a grant equivalent to \$24,000 year salary.

JOHN ADRIAN STRAAYER

VITA - 1969

Name: John A. Straayer, Assistant Professor, Colorado State University

Born: January 16, 1939

Office Address: Department of Political Science
Social Science Building
Colorado State University
Fort Collins, Colorado 80521
Phone - 303-491-5369

Home Address: 1113 Hillcrest Drive
Fort Collins, Colorado 80521
Phone - 303-484-7034

Family: Married - Judith Ann Graham, December 21, 1962
Two Children - Katherine Ann, David Graham

Education: Western Michigan University: B.S. - 1963
Western Michigan University: M.A. - 1964
University of Arizona; Ph.D. - 1967

Thesis Topics: M.A.; The Role of the City Manager in Decision-Making
Ph.D.; The Politics of Water Management in Tucson, Arizona

Areas of Teaching and Research Specialization:

American Government and Politics (Urban, State, Administration,
Public Policy, Natural Resources)

Teaching Experience:

University of Arizona, Teaching Assistant, 1964; Teaching Associate,
1965; Instructor, Summer, 1965.
Colorado State University, Assistant Professor, 1967 to present.

Research Experience:

Western Michigan University, Research Assistant, Institute of
Public Affairs, 1963.
University of Arizona, Research Associate, Water Resources
Research Center and Department of Government, 1966-1967.

Research Grants and Affiliations:

Research Associate, University of Arizona Water Resources Research
Center and Department of Government, associated with study of
"The Economic Implications of Water Policy in Arizona," funded
by OWRR, Professor M.M. Kelso, University of Arizona, Department
of Agricultural Economics, Chief Investigator, 1966-67.

Political Scientist on Colorado State University staff for study of "Fish and Wildlife Resources on Public Lands," funded by Public Land Law Review Commission, Professor G.A. Swanson, Colorado State University, Department of Fishery and Wildlife Biology, Coordinator, 1968.

Recipient of two Colorado State University Faculty Improvement Committee grants to study "Race Relations and Civil Disorder," 1967-68 and 1968-69.

Director, Institute on "Intergovernmental Relations In Water Resources Planning," at Colorado State University, funded by U.S. Army Corps of Engineers, 1969.

Senior Resident Faculty Project Associate, Department of Political Science, Colorado State University, "Project for Research on Water Management in West Pakistan," 1969-1970, funded by A.I.D.

Publications:

Fish and Wildlife Resources on Public Lands, (contributor with G. Swanson, R.B. Held, J. T. Shields and others) prepared for The Public Land Law Review Commission, 1969.

"The American Policy Process and The Problems of Poverty and the Ghetto," forthcoming, Western Political Quarterly.

"Bureaucratic Power and Bureaucratic Direction: A Fusion of Two Theories of Organization," submitted.

"Public Problems and Non-Decision-Making," submitted.

Memberships: American Political Science Association
Pi Sigma Alpha
American Society for Public Administration
Graduate Faculty, Colorado State University
Natural Resources Center, Colorado State University

Prizes and Awards:

Todd Prize in Sociology
Kalamazoo College, 1962

Robbe-Merrill Award in Sociology
University of Oregon

Dissertation Topic:

Status Integration and Morbidity

RESEARCHER'S NAME

Political Scientist on Colorado State University staff for study of "Fish and Wildlife Resources on Public Lands," funded by Wildlife and Fishery Commission, Professor G.A. Swanson, Colorado State University, Department of Biology and Wildlife Studies, Colorado State University, Fort Collins, 1968.

Recipient of two Colorado State University Faculty Development Committee grants to study "Fish and Wildlife Resources on Public Lands," 1967-68 and 1968-69. Assistant Professor of Biology, Director, Institute for Environmental Studies in Water Resources Planning," at Colorado State University, funded by U.S. Army Corps of Engineers, 1969. Senior Researcher, Department of Biology, Colorado State University, "Research for Research on Water Management in West Colorado," 1969-1970, funded by U.S. Army Corps of Engineers, and Colorado State University.

SOCIOLOGY

First and Wildlife Resources on Public Lands, funded by Wildlife and Fishery Commission, Professor G.A. Swanson, Colorado State University, Department of Biology and Wildlife Studies, Colorado State University, Fort Collins, 1968. The Public Law 91-644, 1969. "Sociological Aspects of the Fish and Wildlife Resources on Public Lands," funded by Wildlife and Fishery Commission, Professor G.A. Swanson, Colorado State University, Department of Biology and Wildlife Studies, Colorado State University, Fort Collins, 1968. "Sociological Aspects of the Fish and Wildlife Resources on Public Lands," funded by Wildlife and Fishery Commission, Professor G.A. Swanson, Colorado State University, Department of Biology and Wildlife Studies, Colorado State University, Fort Collins, 1968. "Sociological Aspects of the Fish and Wildlife Resources on Public Lands," funded by Wildlife and Fishery Commission, Professor G.A. Swanson, Colorado State University, Department of Biology and Wildlife Studies, Colorado State University, Fort Collins, 1968. "Sociological Aspects of the Fish and Wildlife Resources on Public Lands," funded by Wildlife and Fishery Commission, Professor G.A. Swanson, Colorado State University, Department of Biology and Wildlife Studies, Colorado State University, Fort Collins, 1968.

Water Quality Research Institute, University of Arizona, Tucson, Arizona, 1963. University of Arizona, Research Associate, Water Resources Center and Department of Land and Water Resources, 1966-1967.

Research Associate, University of Arizona, Water Resources Research Center, Tucson, Arizona, 1966-67. "The Economic Implications of Water Pollution in Arizona," funded by U.S. Army Corps of Engineers, University of Arizona, Department of Agricultural Economics, Chief Investigator, 1966-67.

VITA

Personal Information

Name: Kenneth John Berry
Date of Birth: 4-21-39
Place of Birth: Providence, Rhode Island

Academic Background:

Undergraduate: Major: Sociology Degree

University of Rhode Island
Extension Division (1956-57)
Providence, Rhode Island (1959-60)
Kalamazoo College (1957-59)
Kalamazoo, Michigan (1960-62) B. A.

Graduate: Major: Sociology

University of Oregon
Eugene, Oregon (1962-66) Ph. D.

Fellowships:

National Defense Education Act Fellow: (1962-1965)
National Institute of Mental Health Fellow: (1965-1966)
National Science Foundation: Summer Institute in Computer
Science in Social and Behavioral Science Research:
Boulder, Colorado, 1968.

Prizes and Awards:

Todd Prize in Sociology
Kalamazoo College, 1962
Bobbs-Merrill Award in Sociology
University of Oregon

Dissertation Topic:

Status Integration and Morbidity

Professional Data:

Major Areas of Interest in Teaching and Research:

Social Inequality: Differentiation and Stratification

Methods of Sociology: Logic of Inquiry, Design, and Statistics

Population and Population Methods

Relevant Professional Experience:

Research:

Research Assistant for the Presbyterian Institute of Strategic Studies, New York City (Summer, 1963)

National Institute of Mental Health Research Fellow (1965-1966)

Teaching:

Instructor, University of Oregon (Winter, 1965)

Instructor, Portland State College, Division of Continuing Education (Winter, Spring, 1965 and Fall, Winter, Spring, 1965-1966)

Instructor, University of Oregon (Summer, 1966)

Lecturer, State University of New York at Buffalo (1966-1967)

Assistant Professor, State University of New York at Buffalo (1967-1970)

Associate Professor, Colorado State University (1970 -)

Administrative:

Assistant Chairman
State University of New York at Buffalo
(1967-1969)

Policy Committee
Faculty of Social Science and Administration
State University of New York at Buffalo
(1967-1970)

Administrative:

Curriculum Committee

Faculty of Social Science and Administration

State University of New York at Buffalo

1968-1969

University College Committee on Academic Honesty

State University of New York at Buffalo

1968-1969

Papers and Publications:

"Status Consistency: The Validity of Reported Findings," with Thomas W. Martin. Paper read at the Pacific Sociological Association Meetings, April 27, 1969, Seattle, Washington

"The Teaching-Research Dilemma: Its Sources in the University Setting," with Thomas W. Martin, accepted for publication in the Journal of Higher Education, December 1969.

Biographical Data
for
Carl W. Birky

Title: Associate Professor of Sociology/Anthropology

Birthdate: 27 August 1903

Education: B.S., M.S. University of Illinois 1942

Professional and Honorary Societies:

American Sociological Association
American Association for Advanced Science
Sociological Study of Social Problems
Rural Sociological Society
American Social Criminology
Rocky Mountain Association of Family Relations
Rocky Mountain Social Science Association
American Association of University Professors
Alpha Kappa Delta
Pi Gamma Mu

Professional Experience:

1946 - Present	Associate Professor of Sociology/Anthropology Department of Sociology/Anthropology Colorado State University
1943 - 1946	Instructor Indiana University
1942 - 1943	Assistant Professor Elmhurst College
1929 - 1942	Half-time Teaching University of Illinois
1925 - 1929	Mechanical Draftsman Western Electric Co.

VITA

Bert L. Ellenbogen, Department of Sociology and Anthropology

C-240 Social Science Building
Colorado State University
Fort Collins, Colorado 80521
Telephone: 491-6044
Born: July 5, 1917
Married, one child

Academic Training

B. A. University of Wisconsin, Sociology, 1948
M. A. University of Wisconsin, Rural Sociology, 1950
Ph. D. University of Wisconsin, Rural Sociology, 1957

Professional Experience

1948-50 Research Assistant, Department of Rural
 Sociology, University of Wisconsin

1951-52 Research Associate (Division of Mental
 Hygiene), Wisconsin State Department of Public
 Welfare

1952-53 Rural Sociologist, Cousejo Bienestar Rural,
 Caracas, Venezuela

1953-55 Research Associate (Division of Mental Hygiene),
 Wisconsin State Department of Public Welfare

1955-60 Assistant Professor, Department of Rural
 Sociology, Cornell University

1960-66 Associate Professor, Department of Rural
 Sociology, Cornell University

1962-64 Visiting Professor, Institute of International
 Studies, University of California at Sao Paulo,
 Brazil (On leave from Cornell University)

1966-68 Professor, Department of Sociology, University
 of Minnesota

Bert L. Ellenbogen (continued)

1968 - Chairman and Professor, Department of Sociology and Anthropology, Colorado State University

Professional Activities

1956-66 Consultant to Committee on Rural Medical Services, Medical Society of New York State

1957-65 Director, Cornell Health Survey, Financed by \$200,000 grant from National Institutes of Health to study: Changes in the Availability, Use, and Knowledge of Health Services in Six Upstate New York Counties

1958-66 Member of Latin American Studies Program Committee, Cornell University

1959-66 Member of Board of Directors, Empire State Health Council, New York

1959-60 Associate Managing Editor, Journal of Rural Sociology

1960-61 Managing Editor, Journal of Rural Sociology

1960-62 Member of Board of Directors Social Science Research Center, Cornell University

1962-64 Associate Director, Sociologia (Journal of Sociology published by Foundation School of Sociology and Politics, Sao Paulo, Brazil)

1966 Director of the Cornell University Conference: Development of the Highland Communities of Latin America

1967-68 Member of the Advisory Board, Mid-Western Institute for Comparative Sociology

1966-67 Member of the Program Planning Committee, Rural Sociology Society

1967-68 Chairman, Latin American Studies Program, University of Minnesota

Bert L. Ellenbogen (continued)

- 1969- Member of Faculty Council, Colorado State Univ.
- 1969- Vice-Chairman, Human Relations Committee, Colorado State University
- 1970- Member of University Steering Committee, Colorado State University
- 1970- Member of Rural Sociology - Agency for International Development Liason Committee, Rural Sociology Society
- 1970 Chairman, Arrangements Committee for National Meetings of Rural Sociology Society, Denver, 1971

Overseas Experience

- 1952-53 Twelve months in Venezuela as a member of a multi-disciplinary team which undertook a social and economic survey of the Andean Region
- 1961 Six weeks in Brazil as consultant for the Agency for International Development
- 1962-64 Eighteen months in Brazil as a member of a multi-disciplinary team of social scientists from the Institute of International Studies, University of California, located at the Foundation School of Sociology and Politics, Sao Paulo, Brazil
- 1967 Consultant to Federal University in Parana, Brazil in developing research project on the diffusion of educational practices; spent one month in Brazil
- 1968 Consultant to University of Minnesota project in Chile in developing research project on the diffusion of agricultural practices; spent 6 weeks in Chile

(In addition, brief visitations have been made to Colombia, Costa Rica, Paraguay, and Peru.)

PERSONAL VITAE

David M. Freeman

Birthplace: Glendive, Montana
Birthdate: January 27, 1939

Present Address:

809 Pitkin Street
Fort Collins, Colorado 80521

Educational Background:

B.A. Rocky Mountain College, Billings, Montana. (1957-1961)

M.P.I.A. Graduate School of Public and International Affairs,
University of Pittsburgh. (1961-1962)

Ph.D. Graduate School of International Affairs, University of Denver.
(1964-1967)

Professional Employment:

Peace Corps Operations Officer in the Near East/South Asian Programs
Division. Specific responsibility for programs in Ceylon and Nepal.
(1962-1964)

Research Assistant at the Graduate School of International Studies.
(January/March, 1965).

Teaching Assistant at the Graduate School of International Studies
(September/December, 1966). Policy Formulation and Execution.

Temporary Instructor, Temple Buell College, Denver, Colorado. (January/
June, 1967) Senior Seminar in International Relations and Social
Development.

Assistant Professor, Sociology/Anthropology Department, Colorado State
University, Fort Collins, Colorado (September 1967/Present). Areas of
Special responsibility are Sociology of Development with focus on dif-
fusion of innovation in the context of social conflict, and planning.

Honors and Awards:

B.A. Summa Cum Laude.

Clark Memorial Scholarship, Rocky Mountain College, 1960-1961.

H. J. Heinz Fellowship for International Studies, University of
Pittsburgh, 1961-1962.

Graduate School of International Studies Fellowship, University of Denver,
1964-1966.

David M. Freeman (continued)

Ford Foundation Grant for Dissertation Research, University of Denver,
1966-1967.

Professional Associations:

American Political Science Association

Society for International Development

Publications:

"Peace Corps Training For Overseas Operations: A Critique,"
Masters Thesis. University of Pittsburgh, 1964.

"Value Aggregation and the Language Dispute in Ceylon,"
Doctoral Dissertation. University of Denver, 1967.

"Developmental Change, Valuation, and the End of Ideology"
Paper presented to the Rocky Mountain Social Science Association,
Lubbock, Texas, May 2, 1969.

Linwood L. Hodgdon
Associate Director

B. A. (American International College), M. A.
(Michigan State University), Ph. D. (Michigan
State University)

Director, Office of International Programs;
Professor of Sociology

1962-64 Consultant in Community Development;
Ford Foundation (India)

1961-62 Acting Chief, Community Development
Branch, Rural Development Division, U. S.
Operations Mission/Korea

1961-62 Staff, University of Maryland, Far East
Division, Army Education Center, Seoul,
Korea

1960-62 Consultant in Community Development,
U. S. Operations Mission/Korea, Seoul,
Korea

1958-59 Fulbright Lecturer, Agra University
(India), Institute of Social Sciences

1957-58 Professor, Kansas State University,
Manhattan, Kansas

1954-57 Associate Professor, Kansas State
University, Manhattan, Kansas

1949-54 Assistant Professor, Kansas State
University, Manhattan, Kansas

Sociology of development, community development,
rural social surveys and research

Publications: Community Development in Korea:
An Evaluation of the NACOM Grant-in-Aid
Program, USOM/Korea, 1961; A Survey of
the Income/Expenditure Patterns of Korean
Rice Farmers, USOM/Korea, 1961; "Rural
Community Development in India: Its Problems
and Its Future," Social Action, Roona, India,
1963; Adoption of Agricultural Practices in
Madhya Pradesh (India), National Institute of
Community Development, Hyderabad, India,
1964; Numerous publications dealing with
problems of developing societies and with
national programs of rural development.

Foreign experience: India, Korea, Philippines,
Nigeria, Australia, Oceania

PERSONAL VITA SUMMARY

Thomas D. Harblin
Birth Date: May 5, 1943

1. EDUCATION

LeMoyne College, Syracuse, New York, 1961-65; B.A. in Spanish, 1965.

Cornell University, 1965-69; M.S. in Rural Sociology, 1968.

Ph.D. candidate in Development Sociology
(anticipated date of conferral: September, 1969)

Major: Development Sociology

Minors: Latin American Studies

Economic Development and Planning

2. PROFESSIONAL EXPERIENCE AND FELLOWSHIPS

1965-66 Research Assistant, Department of Rural Sociology, Cornell

1966-67 Teaching Assistant, Department of Rural Sociology, Cornell

1967-68 NDFL Title VI Fellow (Portuguese), Cornell

1968-69 Fulbright-Hays Graduate Research Fellow to Brazil

1969- Assistant Professor, Department of Sociology and Anthropology,
Colorado State University (appointment beginning Sept. 10, 1969)

3. LANGUAGES AND OVERSEAS EXPERIENCE

Portuguese, Spanish

Mexico, June-August, 1963. Participant in LeMoyne sponsored community
development project.

Brazil, June, 1968 - March 1969. Fieldwork for doctoral dissertation,
Sao Paulo (Capital and Interior).

4. FIELDS OF SPECIAL INTEREST

Sociology of the Family; Comparative Social Systems: Family;
Industrialization and Urbanization; Quantitative Methods.

4. PAPERS AND ON-GOING RESEARCH

"Industrialization and Marital Power: The Impact of Industrialization
on Husband-Wife Control and Power Relations in South-Central Brazil,"
Unpublished M.S. Thesis, Cornell, 1968.

"The Measurement of Husband-Wife Control and Power Relationships," a
paper presented with Bernard C. Rosen (Department of Sociology,
Cornell University) to the 34th Annual Groves Conference on Marriage
and the Family, Boston, Massachusetts, April, 1968.

"The Impact of Industrialization and Urbanization on Lower Class
Family Structure in Sao Paulo, Brazil," Ph.D. dissertation, in
preparation.

Evan Vlachos (continued)

Membership in professional societies (regional and/or national) and dates:

Name of society

Date

American Sociological Association	1966
American Academy of Political and Social Science	1967
Rocky Mountain Social Science Association	1967
American Association for the Advancement of Slavic Studies	1968
Center of Neo-Hellenic Studies, University of Texas	1967

Membership on professional committees (regional and/or national) and dates:

Name of committee and society

Date

Subcommittee on Liaison with East European Sociologists, Committee on International Cooperation (Am. Soc. Assoc.)	1967 -
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Areas of teaching specialization (rank in order of your preference):

1. Methodology
2. Demography and Urban Studies
3. Comparative Social Structure

Other

Russian and East European Societies

Evan Vlachos (continued)

Research experience throughout professional career

<u>Title of project</u>	<u>Role on project</u>	<u>Sponsoring organization</u>	<u>Date</u>
Population Change in Developing Areas	Research Associate	International Research Center, Indiana University	1963-64
Leisure Time Study	Research Associate	Athenian Institute of Anthropos, Athens, Greece	1964-66
Recent Greek Emigration	Research Director	Social Sciences Center and Greek Gvt., Athens, Greece	1964-66
Regional Development of the island of Lesbos, Greece	Research Consultant	Greek Government	1965
The Greater Athens Master Plan	Research Associate	Town Planning Division of Greater Athens and Greek Government	1965-67
Juvenile Delinquency Demonstration Project	Research Associate and Action Program Supervisor	U.S. Dept. of Health, Education, and Welfare, Office of Juvenile Delinquency and Youth Development	1966-67
New Community Development Criteria	Research Specialist	Department of Housing and Urban Affairs	1968

Areas of research specialization (in rank order of your preference):

1. Urban Studies
2. Demography and Population Analysis
3. Southeastern Europe

Other

Professional experience (e.g. consulting, teaching, research, etc.) in cultures outside the U.S., indicate nation and date:

<u>Type of experience</u>	<u>Nation</u>	<u>Date</u>
Research	Greece	1964-66
Consulting	Greece	1964-66
Teaching	Greece	1964-66

Section III. Publications Added to Library
During 1969-70 Fiscal Year

A general discussion of publications added to the Water Management Program library during fiscal year 1969-70 is included in Volume I, Part III, "Publications and the WATREMAN Brochure and Response."

Each publication is given a catalog number as it is added to the library. The categories and code numbers are listed below:

AD	Administration	MS	Miscellaneous
AG	Agriculture	OP	Operations Research
EC	Economics	PS	Political Science
ED	Education	SOC	Sociology
ENGR	Engineering	S	Soils
GOP	Government of Pakistan	UP	University of Pakistan
ID	Industry		
LIT	Literature	WR	Water Resources
		VN	Viet Nam

A complete listing of publications added during the 1969-70 fiscal year is included in the remainder of this section.

Catalog No.	Publications
AG 26	<u>Borgo A. Mozzano and the World Beyond</u> ; Cox, I. H.
GOP 34	<u>The Civil Servant in Pakistan</u> ; Ahmad, Muncer
EC 60	<u>Economic Development Reports</u> ; Development Advisory Service
AD 15	<u>Employee Handbook</u>
WR 34	<u>Optimization Techniques for Water Resources Planning</u> ; Haissman
SOC 17	<u>Population Policy and Programs in Southeast Asia; A Discussion of Limiting Factors</u> ; Perkin, Gordon W.
WR 31	<u>Proceedings of the National Symposium on the Analysis of Water-Resources Systems</u> ; American Water Resources Assoc.
WR 24	<u>Water Resource Systems</u> ; Colorado State University
ENGR 3	<u>Worldwide P and I Planning</u> ; January/February 1969
P 4	<u>About the Experiment in International Living</u> ; Pamphlet
WR 37	<u>Alternatives in Water Management</u> ; Committee in Water of the National Research Council
WR 40	<u>Benefit-Cost Analysis for Water Resource Projects</u> ; Hinote, Hubert
P 1	<u>The Challenge of Overseas Service</u> ; Dillion, Douglas
GOP 35	<u>The Comilla Experiment</u> ; Dupree, Louis
ED 7	<u>Community Development</u> (An Introduction to CD for Village Workers) Agency for International Development
ED 5	<u>Community Development</u> (Making Council Meetings More Successful) Agency for International Development

<u>Catalog No.</u>	<u>Publications</u>
ED 2	<u>Community Development and Social Change</u> ; Ogden, Jean
ED 3	<u>Community Development in Urban and Semi-Urban Areas</u> ; Ogden, Jean
WR 39	<u>Community Water Supply Research and Development Programme</u> ; World Health Organization
WR 55	<u>Comparative Characteristics of Special Functionaries in the Acceptance of Agricultural Communities, Ozark and Prairie</u> ; Lionberger, Herbert F. and Chang, H. C.
ED 1	<u>Conference on Conference Planning</u> ; Ogden, Jean
SOC 21	<u>Current Trends in Population Control</u> ; Eastman, Nicholson J.
ED 6	<u>Developing Cooperatives Overseas</u> ; Department of State
GOP 36	<u>Development Aid of Non-governmental Non-profit Organizations, (OECE-ICVA Directory)</u> ; Eggins, Edwin
WR 56	<u>East and West Pakistan</u> ; Rahman, Md. Anisur
ENGR 6	<u>Engineering Education</u> (Computers in Engineering Colleges)
ENGR 9	<u>Engineering Education</u> (Continuing Education)
ENGR 10	<u>Engineering Education</u> (Design Education)
ENGR 8	<u>Engineering Education</u> (Education in Acoustics)
ENGR 12	<u>Engineering Education</u> (Effective Teaching)
ENGR 13	<u>Engineering Education</u> (Engineering Laboratory Teaching)
ENGR 5	<u>Engineering Education</u> (Mechanics)

Catalog No.

Publications

- ENGR 7 Engineering Education (Programmed Learning)
- ENGR 11 Engineering Education (Research and the Curriculum)
- WR 35 Flow and Retention of Water in Layered Soils;
Miller, D. E.
- SOC 16 Ford Foundation Strategy for Population Work;
Harkavy, Oscar; Saunders, Lyle; and Southam, Anna
- ID 9 Industrial Development; United Nations Conference
- ENGR 4 The Journal of Systems Engineering; Wymore, Wayne
- MS 69 Leahy's Hotel-Motel Guide and Travel Atlas 1969
- SOC 19 Modern Organization Theory; Haire, Mason
- P 3 New Directions in Foreign Aid
- SOC 18 News (Laubach Literacy)
- MS 70 The Nuclear Development Gap; I. A. E. A.
- MS 71 The Pakistan Development Review; The Pakistan
Institute of Development Economics
- ID 8 Pakistan Industrial Development Corporation (Charts)
- GOP 33 Political Development in Pakistan; Von Worys, Karl
- SOC 17 Population Policy and Programs in Southeast Asia:
A Discussion of Limiting Factors; Perkin, Gordon W.
- ED 4 Professional Education for World Responsibility;
Sanders, Irwin T.
- AD 16 Public Administration (A Key to Development);
Jump and McKillop
- AG 26 Report of the Joint Pakistan American Agricultural
Review Team; Bureau for Near East and South Asia

<u>Catalog No.</u>	<u>Publications</u>
WR 36	<u>The Storage and Retrieval of Data for Water Quality Control; Green, Richard S.</u>
P 2	<u>Supplementary Statement of J. George Harrar, President, The Rockefeller Foundation to the House Committee on Ways and Means, July 9, 1969</u>
WR 38	<u>Water and Choice in the Colorado Basin; Committee on Water of the National Research Council</u>
SOC 20	<u>Where is the Federal Republic Heading? National Council of the National Front of Democratic Germany</u>
333. 91 Un 35 1	<u>Large Scale Ground Water Development; United Nations (This publication is available in the CSU Library)</u>
AG 45	<u>Agricultural Sciences for the Developing Nations; Moseman, Albert</u>
WR 76	<u>Arid Lands in Perspective; McGinnies, William and Goldman, Bram</u>
MS 81	<u>The Asia Bulletin, September 1969</u>
WR 78	<u>Assisting Topraksu Develop On-farm Water Resources; Cox, Murray, Fuchs, S. and Throm, W.</u>
SOC 32	<u>Collective Adoption of Innovations by Village Cooperatives in Pakistan: Diffusion of Innovations in a Development System; Rahim, Syed</u>
SOC 34	<u>Communication and Innovation in a Pakistani Village; Diffusion Documents Center</u>
AG 43	<u>The Differential Characteristics of Early and Late Adopters of New Farm Practices Punjab State, India; Singh, Gurcharn</u>
ENGR 14	<u>Directory Engineering College Research and Graduate Study 1969</u>

Catalog No.	Publications
ED 10	<u>Exporting Technical Education</u> ; Suskind, Charles and Schell, Lynn
MS 82	<u>Formulation of Research Policies</u> ; Bass, Lawrence and Old, Bruce
SOC 36	<u>Human Behavior</u> ; Berelson and Steiner
MS 79	<u>India and South Asia</u> ; Fersh, Seymour
ED 9a	<u>Intercultural Education</u> ; December 1969
ED 9b	<u>Intercultural Education</u> ; January 1970
MS 78	<u>Latin America</u> ; Peterson, Harold
MS 84	<u>Monthly Checklist of State Publications</u> ; Library of Congress (November 1969)
MS 80	<u>The Nixon Era in World Development</u> ; Grant, James P.
MS 86	<u>The Overall Level and Structure of R & D Efforts in OECD Member Countries</u>
MS 83	<u>Oxford School Atlas for Pakistan</u> ; Ahmad, Kazi and Ahmad, Nafis
GOP 38	<u>Pakistan, the Consolidation of a Nation</u> ; Wilcox, Wayne
GOP 37	<u>Pakistan, Emerging Democracy</u> ; Campbell, Robert
SOC 30	<u>Pakistan, Yesterday and Today</u> ; Wilber, Donald
MS 77	<u>Postepy Nauk Rolniczych</u> ; Dwumiesiecznik (written in Polish)
SOC 35	<u>Predicting the Adoption of Innovations</u> ; Rogers, Everett and Havens, A.
SOC 33	<u>Predicting Receptivity to Community Development Innovations</u> ; Madigan, Francis

<u>Catalog No.</u>	<u>Publications</u>
WR 77	<u>Progress of Reclamation in Soil Reclamation Schemes of Project Number One (Rechna Doab); Khan, All-ud-Din, and Hussain, Muhammad</u>
MS 87	<u>The Punjab in Nineteenth Century Tracts: An Introduction to the Pamphlet Collections in the British Museum and India Office; Barrier, N. Gerald</u>
SOC 31	<u>Rural Life in East Pakistan; Afsaruddin, Mohammad</u>
MS 85	<u>Source List of International Relations Materials 1969-1970</u>
AG 44	<u>The Study of Farmers Attitudes Towards Adoption of Modern Agricultural Practices; Iqbal, Mohammad</u>
AG 41	<u>Subsistence Agriculture and Economic Development; Wharton, Clifton</u>
MS 88	<u>Symposium on Basic Research; Wolfle, Dael</u>
SOC 29	<u>Three Pakistan Villages; Honigmann, John J.</u>
AG 42a	<u>Training and Reference Material for Topraksu's on Farm Water Development Program (Volume I)</u>
AG 42c	<u>Training and Reference Material for Topraksu's on Farm Water Development Program (Volume III)</u>
GOP 39	<u>Union Councils in Operation in District Sialkot; Suleri, M. Asghar</u>
WR 75a	<u>Water for Peace (Volume I)</u>
WR 75b	<u>Water for Peace (Volume II)</u>
WR 75c	<u>Water for Peace (Volume III)</u>
WR 75d	<u>Water for Peace (Volume IV)</u>
WR 75e	<u>Water for Peace (Volume V)</u>

Catalog No.	Publications
WR 75f	<u>Water for Peace (Volume VI)</u>
WR 75g	<u>Water for Peace (Volume VII)</u>
WR 75h	<u>Water for Peace (Volume VIII)</u>
ED 8	<u>The World of Learning 1968-69</u>
EC 64	<u>Economic Interdependence in Southeast Asia;</u> Morgan, Theodore and Spoelstra, Nyle
SOC 37	<u>Overcoming World Hunger;</u> Hardin, Clifford M.
SOC 39	<u>American Professors in Asia;</u> Goodwin, Leonard
AG 48	<u>Catalogue of FAO Publications 1945-1968;</u> Food and Agriculture Organization
AG 2b	<u>CERES; FAO Review</u>
MS 92	<u>China, Korea and Japan;</u> Burks, Ardath W.
WR 79	<u>Competition for Water in an Expanding Economy,</u> <u>The Case of Irrigated Agriculture;</u> Grubb, Herbert W.
WR 82	<u>Design of Water-Resource Systems;</u> Maass, Arthur etc.
AG 47	<u>Diffusion of Technical Agricultural Information in</u> <u>Chile;</u> Brown, M. R.
EC 65	<u>Economic Integration in Asia;</u> Kang, Shin Joe in collaboration with Boeck, Klaus
WR 80	<u>The Effect of Sediment Properties of an Ultrasonic</u> <u>Plane Wave;</u> Flammer, G. H., Stauffer, N. E., and E. Y. Liu
P 5	<u>Food for Peace;</u> Department of Agriculture
P 6	<u>Foreign Economic Growth and Market Potentials</u> <u>for U. S Agricultural Products;</u> U. S. Department of Agriculture

Catalog No.	Publications
ED 9c	<u>Intercultural Education; Education and World Affairs, Feb. 1970</u>
ED 10	<u>International Education: Past, Present, Problems and Prospects; Brademas, John</u>
AD 18	<u>International Organization - A Classified Bibliography; Johnson, Harold S. and Singh, Baljit</u>
GOP 44	<u>Issues Before the 23rd General Assembly; International Conciliation</u>
GOP 45	<u>Issues Before the 24th General Assembly; International Conciliation</u>
GOP 42	<u>Jinnah, Creator of Pakistan; Bolitho, Hector</u>
MS 89a	<u>Mahfil; Numbers 1 and 2, 1968-69</u>
MS 89b	<u>Mahfil; Number 3, 1968-69</u>
MS 91	<u>Mission Overseas; Buither, Harold D. and Thompson, W. N.</u>
WR 84	<u>The Nation's Water Resources; United States Water Resources Council</u>
MS 90	<u>Oak Ridge Associated Universities Newsletter; November 1968 and after</u>
MS 63a	<u>The Pakistan Development Review; Autumn 1969</u>
GOP 43	<u>Pakistan; Stephens, Ian</u>
GOP 41	<u>Pakistan, The Formative Phase 1857-1948; Sayeed, Khalid B.</u>
AD 19	<u>Pakistan Government and Administration: A Comprehensive Bibliography; Jones, Garth N. and Ali, Shaukat</u>
ED 11	<u>Pakistan in the World of Research and Learning; Siddiqui, Akhtar H.</u>

Catalog No.	Publications
GOP 40	<u>Role of Local Governmental and Voluntary Organizations in Country Development</u> ; Reynolds, Dana D.
WR 85	<u>Rufiji River Basin</u> ; Bureau of Reclamation
WR 83	<u>Simulation Techniques for Design of Water-Resource Systems</u> ; Hufschmidt, Maynard M.
SOC 40	<u>Social Change in a North Indian Village</u> ; Barnabas, A. P.
AG 46	<u>Soil Test Interpretation Studies: Field Trials</u> ; Hunter, A. H. and Fitts, J. W.
ID 10	<u>Technical Manpower</u> ; Bulletin of the Division for Scientific & Technical Personnel
WR 81	<u>Ultrasonic Measurement of Sediment Size Distribution and Concentration</u> ; Flammer, Gordon H. and Liu, Ernest Y.
SOC 38	<u>Village Life in Lahore District</u> ; Slocum, W. L.; Akhtar, Jamila; and Sahi, Abrar Fatima
GOP 47	<u>Seeds of Change</u> ; Brown, Lester R.
GOP 46	<u>Symposium on Science and Foreign Policy: The Green Revolution</u> ; Committee on Foreign Affairs
VN 1 a, b, c	<u>The Postwar Development of the Republic of Vietnam: Policies and Programs</u> ; Vol. 1, 2, and 3, Joint Development Group
AG 56	<u>Arid and Semi-Arid Lands -- A Preview</u> ; International Center for Arid and Semi-Arid Land Studies
AG PAM 57	<u>Bureau of Reclamation International Technical Assistance in Development of Arid Lands</u> ; Stamm, Gilbert G.
AG PAM 54	<u>Fertilizer Abstracts</u> ; AGR/Lahore

Catalog No.	Publications
AG PAM 53	<u>ICASALS Newsletter; International Center for Arid and Semi-Arid Land Studies</u>
AG 55	<u>International Center for Arid and Semi-Arid Land Studies (Folder of Information) Texas Technological College</u>
AG PAM 58	<u>Land Classification Survey as Related to the Selection of Irrigable Land; Maletic, John T.</u>
AG PAM 51	<u>Preliminary Report on Rice Milling in West Pakistan; U.S.A.I.D. - Lahore - Dacca</u>
AG 50	<u>Programme for the Development of Irrigation and Agriculture in West Pakistan; Gibb, Sir Alexander and Partners</u>
	Volume 1
	Volume 2a - Annexure 1, Economics
	Volume 2b - Annexure 2, Demand for Agricultural Production
	Volume 3 - Annexure 4, Climate and Hydrology
	Volume 4 - Annexure 5, Land and Soils Annexure 6, Reclamation
	Volume 5 - Annexure 7, Water Supply and Distribution
	Volume 6 - Annexure 8, Drainage and Flood Control
	Volume 7 - Annexure 9, Agriculture
	Volume 8 - Annexure 10, Land Tenure Annexure 11, Institutions and Organizations Annexure 12, Forestry
	Volume 9 - Annexure 13, Farm Surveys
	Volume 10 - Annexure 14, Watercourse Studies
	Volume 11 - Annexure 15A, Bari Doab Regional Development
	Volume 12 - Annexure 15B, Bari Doab Project Reports
	Volume 13 - Annexure 15C, Sutlej and Panjnad Left Bank Regional Development
	Volume 14 - Annexure 15D, Sutlej and Panjnad Left Bank Project Reports

Catalog No.	Publications
	Volume 15 - Annexure 15E, Rechna Doab Regional Development
	Volume 16 - Annexure 15F, Rechna Doab Project Report
	Volume 17 - Annexure 15G, Chaj Doab Regional Development
	Volume 18 - Annexure 15H, Peshawar and Swat Regional Development
	Volume 19 - Annexure 15I, Lower Indus Regional Development
	Volume 20 - Annexure 15J, Lower Indus Project Reports
	Volume 21 - Annexure 15K, Thal Doab and Indus Right Bank Regional Development
	Volume 22 - Annexure 15L, Areas Outside the Irrigated Plains
	Volume 23 - Annexure 16, Methods of Survey Annexure 17, Information Supplied to Other Consultants
	Map Supplement
AG PAM 52	<u>Report on Causes of Decline in Yield of Mexipak Wheat During the 1968-69 Season; Ezzo Pakistan Fertilizer Co. Ltd.</u>
AG 106.5 K 48	<u>Resources in America's Future; Landsberg, Fischman, and Fisher (CSU Morgan Library)</u>
AD PAM 32	<u>Civil Service in Pakistan; Abbasi, M. W.</u>
AD PAM 31	<u>Emerging Role of the Administrator in Pakistan; Hamid, Agha Abdul</u>
AD PAM 22	<u>Modern Concept of Budget in the Context of Financial Administration of Pakistan; Kazi, A. G. N.</u>
AD 23	<u>Nipa Progress Report April 1961 to June 1963; National Institute of Public Administration</u>
AD 24	<u>Nipa Progress Report July 1963 to June 1964</u>
AD 25	<u>Nipa Progress Report July 1964 to June 1965</u>

<u>Catalog No.</u>	<u>Publications</u>
AD 26	<u>Nipa Progress Report July 1965 to June 1966</u>
AD 27	<u>Nipa Progress Report July 1966 to June 1967</u>
AD PAM 29	<u>Papers Relating to Two Seminars Held at Nipa, Lahore;</u> <ol style="list-style-type: none"> 1. Systems Approach and O & M 2. Personnel Administration
AD 21	<u>Passport Offices Lahore - Dacca - A System and Procedure Study; Qureshi, Anwar</u>
AD 20	<u>Problems of Public Enterprises; Beg, M. A. K.; Abramson, Robert; and Ahmad, Iftikhar</u>
AD 30	<u>Report of the Proceedings of the Seminars on Sys- tems Approach, O & M and Personnel Adminis- tration; Volume 1, National Institute of Public Administration</u>
AD 28	<u>WAPDA Telephone Directory; October 1968</u>
EC 72	<u>Budgeting for National Development; Moquit A.</u>
EC PAM 66	<u>The Bureau of Economic Research University of Dacca</u>
EC 70	<u>Cost-Benefit Analysis; Khan, Anwar Tahmasp</u>
EC PAM 73	<u>Employment Patterns and Employment Alterna- tives in Rural South Vietnam; Stroup, Robert H. and Gift, Richard E.</u>
EC 68	<u>The Pakistan Development Review; Volume IX, Number 4, Winter 1969</u>
EC 69	<u>Progress Report 1966-67 - 1968-69; Pakistan Institute of Development Economics</u>
EC PAM 71	<u>The Role of Banking in Economic Development of Pakistan; Hasnie, S. A.</u>

<u>Catalog No.</u>	<u>Publications</u>
ENGR 32	<u>Annotated Bibliography on Hydrology and Sedimentation 1963-65; Water Resources Council</u>
ENGR 25	<u>Canal and Headworks Data Observation Programme 1963-64 Data Tabulation; Water and Power Development Authority</u>
ENGR 26	<u>Canal and Headworks Data Observation Programme 1962-63 Data Tabulation - Part I; Water and Power Development Authority</u>
ENGR 27	<u>Canal and Headworks Data Observation Programme 1962-63 Data Tabulation - Part II; Water and Power Development Authority</u>
ENGR 28	<u>Capacity Survey of Storage Reservoirs; Murthy, B. N.</u>
ENGR PAM 39	<u>Cost Estimate of a Departmental Tubewell with Brass Strainer</u>
ENGR PAM 31	<u>Development of Soil Sealant for Low Cost Canal Lining; Ahmad, Nazir and Razzaq, Malik Abdur</u>
ENGR 40	<u>Engineering and Economic Relationships in the Selection and Classification of Irrigable Lands; Maletic, John T.</u>
ENGR 34	<u>Forty Years of Research in the Irrigation Research Institute, Vol. 1, Part A, Bibliography 1924-64; Tahir, Muhammad</u>
ENGR 35	<u>Forty Years of Research in the Irrigation Research Institute, Vol. 1, Part B, Synopsis 1924-64; Tahir, Muhammad</u>
ENGR 36	<u>Forty Years of Research in the Irrigation Research Institute, Vol. 2, Part A, Bibliography 1947-64; Zafar, G. F.</u>
ENGR 37	<u>Hub Dam Project; Associated Consulting Engineers (ACE) Ltd.</u>

Catalog No.	Publications
ENGR PAM 38	<u>Hub Dam Project (Map)</u> ; Directorate of Designs
ENGR PAM 42	<u>Impacts of Irrigation Modernization -- Land Classification</u> ; Maletic, John T.
ENGR PAM 41	<u>Irrigation, A Selective Function -- Selection of Project Lands</u> ; Maletic, John T.
ENGR 23	<u>Irrigation System Evaluation and Improvement</u> ; Merriam, John L.
ENGR 47	<u>Lam Nam Oon Project Thailand</u> ; Royal Irrigation Department
ENGR PAM 23	<u>A Model Study on Velocity Determination of Sub-soil Flow</u> ; Saleem, Mohammad; Ahmad, Bashir; and Beg, Mirza, M. S.
ENGR PAM	<u>A New Method for Determining the Direction of Natural Flow of Ground Water</u> ; Saleem, Mohammad
ENGR 21	<u>Outline of Recent Hydraulic Research in Japan</u>
ENGR 24	<u>Rawal Dam Completion Report</u> ; West Pakistan Water and Power Development Authority
ENGR PAM	<u>Rawal Dam: Its Storage Capacity and Life</u> ; Tahir, Ch. Muhammad
ENGR 45	<u>Report of Yanhee Project, Thailand for Power, Irrigation, Flood Control & Navigation, Vol. 1</u> ; United States Department of the Interior
ENGR 46	<u>Report on Yanhee Project, Thailand for Power, Irrigation, Flood Control & Navigation, Vol. 2</u> ; United States Department of the Interior
ENGR 48	<u>The River Plate Basin: A Summary Report</u> ; Inter-American Development Bank

Catalog No.	Publications
ENGR 49	<u>Seminar Papers on Waste Water Treatment and Disposal</u> ; Boston Society of Civil Engineers - Sanitary Section
ENGR PAM 43	<u>Sprinkler Irrigation Soils, Climate, and Land Classification</u> ; Maletic, John T.
ENGR PAM 22	<u>Tanda Dam Project</u> ; Revised P. C. I. Proforma
ENGR 44	<u>Thailand Electric Power Study</u> ; Thailand Electric Power Study Team
ENGR 20	<u>Use of Burnt Clay as Pozzalanic Material in Portland Cement</u> ; Zafar, C. F., Hamdani, I. H.; and Ahmdani
GOP 48	<u>Labour Policy of Government of Pakistan</u> ; Ministry of Health, Labour and Family Planning
GOP 49	<u>Trade in Pakistan - Ideals & Practice</u> ; Khan, Anwar Tahmasp
ID PAM 12	<u>Desirability and Implications of Developing a Pakistan Deep Sea Fishing Industry</u> ; Morgan, Alvin M. and Unti, James G.
ID 11	<u>Industrial Estates in West Pakistan</u>
LIT 1	<u>Mahfil</u> ; A Quarterly of South Asian Literature
MS 95	<u>Communicating by Satellite</u> ; Laskin, Paul
MS 96	<u>Communicating by Satellite - An International Discussion</u> ; Gordon L. Weil
MS 98	<u>Cumulative Index of Pide Publications (1961-68)</u>
MS PAM 97	<u>954.7 Expanding Dewey Decimal Classification Number for Pakistan</u> ; Danish, Usman Ahmad
MS 99	<u>The Plain Truth</u> ; Armstrong, Herbert W. (editor)

<u>Catalog No.</u>	<u>Publications</u>
OR PAM 12	<u>Abstract (Paper comparing hospital systems with scheduled and unscheduled patients)</u>
OR 8	<u>An Algorithm for Linear Optimal Control Systems with State Space Constraints; Kapur, Kailash E.</u>
OR 22	<u>Area Development Planning with Mathematical Programming, Naik, M. D.</u>
OR PAM 11	<u>Autoregressive Forecasting of Telephone Time Series by Spectral Analysis; Tomasek, O.</u>
OR 9	<u>A B-B-B Method for Linear and Nonlinear Bivalent Programming; Hammer, Peter L.</u>
OR PAM 23	<u>Campus Building Arrangements Using the Branch and Bound Technique with Subjectively Established Bounds; Dickey, J. W.; Conner, G. R.; and Hopkins, J.</u>
OR PAM 2	<u>Comparative Analysis of Nonlinear Programming Codes with the Weisman Algorithm; Holzman, A.G.</u>
OR PAM 7	<u>Density and Value Per Pound Distributions of Air-eligible Military Overseas Shipments; Goodriend, Richard D.</u>
OR 17	<u>Finding N-paths Through a Maze of Unreliable Units; Myers, James P. and Walvekar, Arun</u>
OR PAM 6	<u>Introduction to GUB Generalized Upper Boundings; Management Science Systems</u>
OR PAM 20	<u>Inventory Control with Probabilistic Demand and Periodic Withdrawals; Hausman, Warren H. and Thomas, L. Joseph</u>
OR PAM 14	<u>A Loading Simulation for Minimizing the Number of Aircraft Required for a Given Mission; Levy, E.</u>
OR PAM 15	<u>MAD: Mathematical Analysis of Downtime; Brandt, Edward B. and Limaye, Dilip R.</u>

Catalog No.	Publications
OR 18	<u>A Mathematical Theory for the Control of Pest Populations</u> ; Mann, Stuart H.
OR PAM 25	<u>Mathematical Models for Decentralized Decision Systems</u> ; Eto, Hajime
OR PAM 27	<u>Maximum Likelihood Estimation of the Weibull Distribution Using Nonlinear Programming</u> ; Seymore, G. E. and Maki, W. R.
OR PAM 13	<u>A Method of Simulating Queueing Problems on a Small Computer</u> ; Heppe, Robert
OR 1	<u>Operations Research 15 Year Index</u> ; Fenske, Russell W.
OR PAM 3	<u>Operations Research in Fleet Planning (Air Canada)</u> ; Whitton, H. J. G.; Elce, I; and Tennant, J. C.
OR PAM 21	<u>On the Concept of Linearizing Geometric Programs</u> ; Duffin, R. J.
OR 19	<u>Programming Formats for Credit Networks</u> ; Thore, Sten
OR PAM 10	<u>Scheduling of Patients in the Radiology Department of the University of Minnesota Hospitals (An Outline of the System and the Proposed Solution)</u> ; Karakitsos, Dimitrios
OR PAM 4	<u>Simulation by Incremental Stochastic Transition Matrices (SISTM)</u> ; Hosford, John E.
OR PAM 24	<u>Stopping Rules for Sequencing Problems with Applications to Missile Range Scheduling</u> ; Randolph, Paul H. and Diaz, Alfonso, and Gree, Robert
OR PAM 26	<u>Stronger Inequalities for 0, 1 Integer Programming Using Knap-sack Function</u> ; Kianfar, Ferydoon
OR PAM	<u>Two-Person Zero-sum Games: A Geometric Approach</u> ; Leitmann, G.

<u>Catalog No.</u>	<u>Publications</u>
OR PAM 16	<u>Use of a Computer Language in Teaching Dynamic Programming</u> ; Trimble, C. J.; Dean, Arthur, and Meier, W. L., Jr.
PS 1	<u>Focus on Change: Intergovernmental Relations in Water Resources Planning</u> ; Straayer, John A.
PS PAM 2	<u>A Probability Model for the Rise and Decline of States</u> ; Dacey, Michael F.
S PAM 2	<u>Compaction of Soils</u> ; Nazir, Muhammad and Parvez, Jameel A.
S PAM 1	<u>A New Method of Soil Moisture Determination (Calcium Carbide Method)</u> ; Zafar, G. F. and Ahmad, Irshad
SOC 45	<u>Blossoms in the Dust</u> ; Nair, Kusum
SOC PAM 49	<u>Brain Drain or Overflow?</u> Baldwin, George B.
SOC PAM 47	<u>The Foreign Ministers as a World Elite</u> ; Modelski, George
SOC PAM 42	<u>Institutional Factors Limiting Progress in the Less Developed Countries</u> ; Long, Erven J.
SOC 44	<u>Modernization and the Migration of Talent</u> ; Committee on the International Migration of Talent
SOC PAM 48	<u>Rank-Dependent Interaction and Mobility: Two Aspects of International Stratification</u> ; East, Maurice A.
SOC PAM 43	<u>Spotlight on the Quality of Life</u> ; The Bank of California International Division
SOC 46	<u>Urban Bengal</u> ; Park, Richard L. (editor)
SOC 41	<u>Women at Work</u> ; Birjis, Zahida

Catalog No.	Publications
WR 113	<u>Advances in Water Quality Improvement</u> ; Gloyna, Earnest F. and Eckenfelder, W. Wesley, Jr.
WR 91	<u>Annual Report for the Year 1959</u> , Vol I; Ali, Abid (editor)
WR 120	<u>Bibliography with Annotations on Water Diversion Conveyance and Application for Irrigation and Drainage</u> ; Mahmood, Khalid; Mercer, A. G.; and Richardson, E. V.
WR 111	<u>Detailed Progress Report August 1969</u> ; Ground Water Development Project
WR 114	<u>Effects of Watershed Changes on Streamflow</u> ; Water Resources Symposium No. 2; Moore, Walter L. and Morgan, Carl W.
WR PAM 112	<u>An Estimation of Evaporation from Water Surface in West Pakistan</u> ; Ahmad, Nazir; Sarfraz, Mohammad; and Adram, Mohammad
WR PAM 115	<u>Floods in River Indus -- Their Frequency and Magnitude</u> ; Bhatti, A. K.
WR 97	<u>Hub Dam Spillway (First Report)</u> ; Irrigation and Power Department
WR 98	<u>Hydraulic Research in West Pakistan</u> ; Mahmood, Khalid
WR 96	<u>Hydrological Data: Its Necessity & Methods of Computation</u> ; Dhir, R. D.; Ahuja, P. R., and Singh, Harbhajan
WR PAM 116	<u>Hydrology, Development and Utilization of Water Resources of India</u> ; Ahuja, P. R.
WR PAM 109	<u>Gomal Zam Multipurpose Project</u> , Government of Pakistan Planning Commission

Catalog No.	Publications
WR PAM 110	<u>Gomal Zam Project - General Layout (Map);</u> Directorate of Designs
WR PAM 119	<u>Improving the Analysis of Water Resources;</u> Watson, Ira A.
WR 95	<u>Irrigation and Power; Journal of Central Board of</u> Irrigation and Power, Vol. 26, No. 3.
WR 93	<u>Irrigation and Power; Journal of Central Board of</u> Irrigation and Power, Vol. 24, No. 3
WR 94	<u>Irrigation and Power; Journal of Central Board of</u> Irrigation and Power, Vol. 23, No. 3
WR 92	<u>Irrigation Research Institute, West Pakistan,</u> <u>Lahore</u>
WR 89	<u>Karachi Irrigation Project; West Pakistan Water</u> and Power Development Authority
WR 90	<u>Khanpur Dam Project; Water and Power Develop-</u> ment Authority
WR 88	<u>Khanpur Dam Spillway (Haro River); Irrigation</u> Research Institute, Dr. Mushtao Ahmad S. K. Director
WR 86	<u>Link Canals of the Indus Basin Project; (Map)</u>
WR 121	<u>1960 Annual Report of River and Climatological</u> <u>Data of West Pakistan; Surface Water Circle</u>
WR 122	<u>1961 Annual Report of River and Climatological</u> <u>Data of West Pakistan; Surface Water Circle</u>
WR 123	<u>1962 Annual Report of River and Climatological</u> <u>Data of West Pakistan; Surface Water Circle</u>
WR 125	<u>1963 Annual Report of River and Climatological</u> <u>Data of West Pakistan, Volume 1; Surface Water</u> Circle

Catalog No.	Publications
WR 124	<u>1963 Annual Report of River and Climatological Data of West Pakistan, Volume 2; Surface Water Circle</u>
WR 127	<u>1964 Annual Report of River and Climatological Data of West Pakistan, Volume 1; Surface Water Circle</u>
WR 126	<u>1964 Annual Report of River and Climatological Data of West Pakistan, Volume 2; Surface Water Circle</u>
WR 128	<u>1965 Annual Report of River and Climatological Data of West Pakistan, Volume 1; Surface Water Hydrology Project</u>
WR 129	<u>1965 Annual Report of River and Climatological Data of West Pakistan, Volume 2; Surface Water Hydrology Project</u>
WR 130	<u>1966 Annual Report of River and Climatological Data of West Pakistan, Volume 1; Surface Water Hydrology Project</u>
WR 131	<u>1966 Annual Report of River and Climatological Data of West Pakistan, Volume 2; Surface Water Hydrology Project</u>
WR 132	<u>1966 Annual Report of River and Climatological Data of West Pakistan, Volume 3, Surface Water Hydrology Project</u>
WR PAM 118	<u>Proposal for Supplemental Support of Colorado State University's Program in Water Resources Management; Colorado State University</u>
WR 100	<u>The Role of Glaciers and Snow on Hydrology of Punjab Rivers; Sain, Kanwar</u>
WR 99	<u>Silting of Reservoirs; Khosla, A. N.</u>
WR PAM 117	<u>State Organizations for Water Resources Planning; Utah Water Research Laboratory</u>

Catalog No.	Publications
WR PAM 105	<u>A Study of Integral Utilization of Water Resources of West Pakistan</u> ; Ahmad, Mian Muzaffar
WR 101	<u>Symposium on Economic and Optimum Utilization of Irrigation Supplies, Part 1</u> ; Central Board of Irrigation and Power
WR 102	<u>Symposium on Economic & Optimum Utilization of Irrigation Supplies, Part 2</u> ; Central Board of Irrigation and Power
WR 104	<u>Symposium on Efficiency of Water Distribution and Use on the Land</u> ; Central Board of Irrigation and Power
WR 103	<u>Symposium on Interrelation Between Irrigation and Drainage</u> ; Central Board of Irrigation and Power
WR 108	<u>Symposium on Irrigation Water Management</u> ; Central Board of Irrigation and Power
WR 106	<u>Tapping Underground Water by Different Types of Drilling Rigs</u> ; Central Water and Power Commission Ministry of Irrigation and Power
WR 107	<u>Tubewell and Ground Water Resources 1961</u> ; Central Board of Irrigation and Power
VN 2	<u>Mekong Delta Development Program</u> ; Development and Resources Corporation
AG PAM 52	<u>Report on Causes of Decline in Yield of Mexipak Wheat During the 1968-69 Season</u> ; Esso Pakistan Fertilizer Co. Ltd.
AG 63	<u>Building Institutions to Serve Agriculture</u> ; AID-University Cooperation in Technical Assistance. A Summary Report of the CIC-AID Rural Development Research Project, 1968

Catalog No.	Publications
AG 61	<u>The Green Revolution.</u> Symposium on Science and Foreign Policy. Proceedings before the Subcommittee on National Security Policy and Scientific Developments of the Committee of Foreign Affairs. House of Representatives. December 5, 1969
AG 64	<u>Khanpur Dam Project (Haro River) Vol. III, Part 1.</u> Associated Consulting Engineers, Ltd., 1962
AG 65	<u>Khanpur Dam Project (Haro River) Vol. III, Part 3.</u> Appendices., Associated Consulting Engineers, Ltd., 1962
AG 74	<u>Agriculture in Pakistan: A Selected Bibliography,</u> Akhtar H. Siddiqui
AG 75	<u>The International Bibliography of Rice Research;</u> Milagros Zamora, Bibliographer; The International Rice Research Institute, 1969
AG 76	<u>Food Production and Income Distribution in South Asia -- The Double Dilemma;</u> A symposium sponsored by the College of Agriculture and the South Asia Center, College of Arts and Sciences, Kansas State University, Manhattan, Kansas, 1969
AG 66	<u>War On Hunger;</u> A Report from AID, Published Monthly
AG 67	<u>Photosynthesis Under Field Conditions, VI, Solar Radiation Balance and Photosynthetic Efficiency;</u> C. S. Yocum, L. H. Allen, and E. R. Lemon, Xerox Copy, Agronomy Journal, May-June, 1964
AG 68	<u>Relationship Between Transpiration and the Internal Water Relations of Plants;</u> C. F. Ehlig and W. R. Gardner, Agronomy Journal, March-April, 1964, (Xerox Copy)

Catalog No.

Publications

- AG 69 Influence of Certain Soil-Profile Characteristics Upon the Distribution of Roots of Grasses; R. L. Fox, J. E. Weaver and R. C. Lipps, *Agronomy Journal*, December 1953, (Xerox Copy)
- AG 71 Soil Moisture in Relation to Plant Growth; Paul J. Kramer, *The Botanical Review*, Nov., 1944
- AG 70 Differential Aluminum Tolerance of Wheat and Barley Varieties in Acid Soils; C. D. Foy, W. H. Armiger, L. W. Briggles and D. A. Reid, *Agronomy Journal*, September - October, 1965
- AG 72 Evapotranspiration and Soil Moisture-Fertilizer Interrelations with Irrigated Grain Sorghum in the Southern High Plains; Agricultural Research Service, U. S. Department of Agriculture, Conservation Research Report No. 5, August, 1965
- AG 73 Report to the Indus River Annual Conference; Dick Lockman, Methodist Agricultural Extension Service, Multan, October 23, 1968
- EC 91 The Asian Economist; Vol. 1 No. 4, July - August, 1969
- EC 86 Commercial Irrigation Enterprise -- The Fear of Water Monopoly and the Genesis of Market Distortion; Alston, Richard M., Cornell University, Ph.D. Thesis, 1970
- EC 92 Development Digest; A quarterly journal of experts, summaries and reprints of current materials on economic and social development
- EC 87 An Economic Analysis of the Price of Thai Rice; Tongpan, Sopin, Ohio State University 1969
- EC 84 Economic Analysis of Water Resource Development in the Susquehanna River Basin; An Application of Interregional Linear Programming; Howes, Richard R., University of Pennsylvania, Ph.D. Thesis, 1966

Catalog No.	Publications
EC 88	<u>Economic Development and Cultural Change;</u> Quarterly Periodical, The University of Chicago Press
EC 85	<u>Economic Evaluation of a Water Resource Devel-</u> <u>opment Project in a Developing Economy;</u> Mobasheri, Fereidoun, University of California 1968
EC 89	<u>Efficient Water Use and Farm Management Study-</u> <u>India;</u> The Ralph M. Parsons Company, Jan, 1970
EC PAM 83	<u>Some Economic Aspects of Water Use;</u> Reyes, Rodolfo D., IRRI Saturday Seminar, November, 23, 1968
ENGR 24	<u>Rawal Dam Completion Report;</u> West Pakistan Water and Power Development Authority
ENGR PAM 30	<u>Rawal Dam: Its Storage Capacity and Life;</u> Tahir, Ch., Muhammad
ENGR 45	<u>Report of Yanhee Project, Thailand for Power,</u> <u>Irrigation Flood Control and Navigation;</u> Vol. 1 United States Department of the Interior
ENGR 46	<u>Report on Yanhee Project, Thailand for Power,</u> <u>Irrigation Flood Control and Navigation;</u> Vol 2, United States Department of the Interior
ENGR 48	<u>The River Plate Basin: A Summary Report;</u> Inter-American Development Bank
ENGR 49	<u>Seminar Papers on Waste Water Treatment and</u> <u>Disposal;</u> Boston Society of Civil Engineers - Sanitary Section
ENGR PAM 43	<u>Sprinkler Irrigation Soils, Climate and Land</u> <u>Classification;</u> Maletic, John T.
ENGR PAM 22	<u>Tanda Dam Project;</u> Revised P.C.I. Proforma

Catalog No.	Publications
ENGR 44	<u>Thailand Electric Power Study; Thailand Electric Power Study Team</u>
ENGR 20	<u>Use of Burnt Clay as Pozzolan Material in Portland Cement; Zafar, C. F., I. H. Hamdani and Ahmdani</u>
ENGR 56	<u>Development of an Engineered Plan for a United Engineering Information Service; Battelle Memorial Institute, Columbus Laboratories, July 1969</u>
ENGR 52	<u>Dynamic Hydrology; Eagleson, Peter S., 1970</u>
ENGR 53	<u>Survey of Current Systems for Selective Dissemination of Information (SDI); Housman, Edward M. June, 1969</u>
ENGR 54	<u>A Plan for a Comprehensive Water Resources Information Exchange System; Banks, Harvey O., and Charles G. Wolfe, August 1969</u>
ENGR 55	<u>Development of an Engineered Plan for a United Engineer Information Service (UEIS); Liston, D. M., July 1969</u>
ENGR 57	<u>Optimal Timing of Irrigation, Smith, George L.</u>
ENGR 62	<u>The Britannica Review of Developments in Engineering Education; Hall, Newman A., ed, 1970</u>
ENGR 61	<u>Bureau of Reclamation Planning Activities; Ahlberg, Raymond, S. J., December 1968</u>
ENGR 59	<u>An Introduction to Hydrodynamics and Water Waves - Vol. 1: Fundamentals, Le Mehaute, Bernard, July 1969</u>
ENGR 60	<u>An Introduction to Hydrodynamics and Water Waves - Vol. II: Water Wave Theories, Le Mehaute, Bernard, July 1969</u>

Catalog No.	Publications
ENGR 58	<u>Making the Most of Metrication</u> ; Vickers, J. S.
ENGR PAM 69	<u>European Scientific Notes</u> ; Office of Naval Research, London; This document is issued for the information of U.S. Government scientific personnel and contractors. It provides information on current research in various scientific fields.
ENGR 63	<u>Proceedings of the Specialty Conference on Current Research into the Effects of Reservoirs on Water Quality</u> ; Ed. by Rex A. Elder, Peter A. Krenkel and Edward L. Thackston. ASCE, Hydraulics Division, Sanitary Engineering Div., Technical Report No. 17, January 1968.
ENGR 65	<u>Importance of Stored Soil Moisture to the Growth of Corn In The Dry to Moist Sub-Humid Climatic Zone</u> ; R. F. Holt, D. R. Timmons, W. B. Voorhees, and C. A. Van Doren; January - February 1964, Agronomy Journal.
ENGR 66	<u>Effect of Corn Population on Yield, Evapotranspiration, and Water-Use Efficiency in the Northwest Corn Belt</u> ; D. R. Timmons, R. F. Holt, and J. T. Moraghan; Agronomy Journal, July - August, 1966.
ENGR 67	<u>Influence on Precipitation, Soil Water, and Plant Population Interactions on Corn Grain Yields</u> ; R. F. Holt and D. R. Timmons; Agronomy Journal, July - August, 1968.
ENGR 68	<u>Presidential Address</u> ; Mr. B. M. Abbas A. T. 14th Annual Convention of the Institute of Engineers, Pakistan, November 2, 1968
ENGR 64	<u>Scheduling Irrigations Using Climate-Crop-Soil Data</u> ; M. E. Jensen, D. C. N. Robb and C. E. Franzoy; Journal of the Irrigation and Drainage Division, March, 1970
GOP 53	<u>Pakistan in the World of Research and Learning; A Guide to Research and Development Organizations</u> ; Akhtar H. Siddiqui, Pakistan Reference Publication, Karachi, 1968.

Catalog No.	Publications
LIT 1	<u>Mahfil; A Quarterly of South Asian Literature</u>
LIT 2	<u>The Criterion; Journal of the Islamic Research Academy, Vol. 4 No. 4, July - August, 1969</u>
LIT 3	<u>A History of the Reigning Family of Lahore; Smyth, G. Carmichael, 1961</u>
LIT 4	<u>Cabool; A Personal Narrative of a Journey to, and Residence in That City; Burnes, Sir Alexander, 1961</u>
LIT 5	<u>Alberuni's India, Vols. I & II; Sachau, Edward C. 1962</u>
LIT 6	<u>A Year on the Punjab Frontier; Vols. I & II; Edwards, Herbert B., 1963</u>
OR 28	<u>Research and Development Directory; Government Data Publications, 1970</u>
OR 29	<u>A Computerized System for Planning Major Investment Decisions in Oil; E. L. Dougherty and D. H. Thurnau; Scientific Software Corporation, 1969</u>
OR 30	<u>Optimizing the Scheduling of Oil Field Development; R. C. Goodknight, E. L. Dougherty and D. H. Thurnau; Scientific Software Corp., 1970</u>
OR 31	<u>System Analysis of Large Networks of Ocean Data Stations; S. D. Nelson, Design Specialist, Systems Analysis Dept., Convair Division of General Dynamics, San Diego, Calif., 1970</u>
PS 4	<u>Bureaucracy and Development in Pakistan; Inayatullah, ed., 1963</u>
PS 5	<u>Water Management in West Pakistan; Schmidt, Robert F. CSU Master's Thesis, 1970</u>

<u>Catalog No.</u>	<u>Publications</u>
PS 6	<u>India, Government and Politics in a Developing Nation; Robert L. Hardgrave; Harcourt, Brace and World, Inc. San Francisco, 1970</u>
SOC 50	<u>Punjabi Rural Social Institutions - An Exploratory Study; West Pakistan Agricultural University, Lyallpur, 1969</u>
SOC 51	<u>Directory, Pakistan Sociological Association; University of Karachi</u>
SOC 52	<u>Program, 5th Annual Pakistan Sociological Conference; January 3-5, 1969</u>
SOC 57	<u>Food Consumption Patterns: A Study of Agricultural University Employees; Chaudhri, Haider Ali, 1966</u>
SOC 55	<u>Pakistani Society: A Sociological Analysis; Chaudhry, Mohammad Iqbal and Mushtaq Ahmad Khan, 1968</u>
SOC 61	<u>Bengal: East and West; Alexander Lipski, ed., Asian Studies Center, Michigan State University, South Asia Series</u>
SOC 62	<u>Outline for the Study of Pakistan National Culture; John J. Honigmann and Marguerite van Doorslaer; Studies in Pakistan National Culture, No. 3, Institute for Research in Social Science, University of North Carolina, Chapel Hill, 1956</u>
SOC PAM 63	<u>Some Themes in Pakistan National Culture; John J. Honigmann and Richard N. Carrera; Studies in Pakistan National Culture, No. 4., Institute for Research in Social Science, University of North Carolina, Chapel Hill, 1957</u>
SOC 64	<u>Technology and Social Change; H. E. Hoelscher, University of Pittsburgh</u>
WR 133	<u>Optimal Land and Water Resource Development: A Linear Programming Application; McKee, Vernon, Iowa State University 1966</u>

Catalog No.	Publications
WR 134	<u>Survey of Water Resources - Mun and Chi River Basins</u> ; Bureau of Reclamation, March 1965
WR 135	<u>Programme for Waterlogging and Salinity Control in the Irrigated Areas in West Pakistan</u> ; Water and Power Development Authority
WR 136	<u>Water Resources and Economic Development of the West</u> ; Report No. 1, Research Needs and Problems, Brough, Owen L., March 1953
WR 137	<u>Report Kunhar River Project</u> ; Chas T. Main, Inc. 1960
WR 138	<u>Supplementary Report - Kunhar River Project</u> ; Chas T. Main, Inc., 1961
WR 139	<u>Gomal River Scheme: Preliminary Notes</u> ; Energoprojekt, Consulting Engineers, 1961
WR 140	<u>Gomal River Scheme: Project Planning Report Vol. 1: General Report</u> ; Energoprojekt, Consulting Engineers, 1963
WR 141	<u>Gomal River Scheme: Project Planning Report Vol. II: Khajuri Kach Arch Dam</u> ; Energoprojekt, 1963
WR 142	<u>Gomal River Scheme: Basin Appraisal Report Vol. III: Drawings</u> ; Energoprojekt
WR 143	<u>Gomal River Scheme: Project Planning Report Vol. III/1: Khajuri Kach Hydel Plant</u> ; Energoprojekt, Consulting Engineers, 1963
WR 144	<u>Gomal River Scheme: Project Planning Report Vol. III/2: Khajuri Kach Hydel Plant Drawings</u> ; Energoprojekt, Consulting Engineers 1963
WR 145	<u>Gomal River Scheme: Project Planning Report Vol. IV: Irrigation</u> ; Energoprojekt, Consulting Engineers

Control of Water-Logging and Salinity by Tube Well Pumping, A Critical Review; Ahmad, Nazir

International Commission on Irrigation and Drainage (Improving Stability of Flood Embankments with Sand Core Wall); Ahmad, Nazir and Shah, S. L.

Recording of Temperature Changes inside the Concrete of Sukkur Barrage Arches; Ahmad, Nazir

Flood Embankments Practice in Sind; Ahmad, Nazir

Reducing Evaporation with Monomolecular Films; Ahmad, Nazir and Sarfraz, Mohammad

Soil Conservation in the Catchment of Jhelum River; Ahmad, Nazir and Ali, Dewan

Sediment Characteristics of the Indus with Reference to Erosion of its Catchment; Ahmad, Nazir and Ali, Dewan

Silt Trap Efficiency of Reservoirs with Special Reference to Tarbela & Mangla Dams; Ahmad, Nazir

Designing Low Cost Tubewells for East Pakistan; Ahmad, Nazir

Vol. II. Kanpur Kach Arch Dam, Energoprojekt, 1963

WR 142 Gomal River Scheme, Basic Appraisal Report Vol. III. Drawings, Energoprojekt

WR 143 Gomal River Scheme, Project Planning Report Vol. III/1. Kanpur Kach Hydel Plant Energoprojekt, Consulting Engineers, 1963

WR 144 Gomal River Scheme, Project Planning Report Vol. III/2. Kanpur Kach Hydel Plant Drawings Energoprojekt, Consulting Engineers 1963

WR 145 Gomal River Scheme, Project Planning Report Vol. IV. Irrigation, Energoprojekt, Consulting Engineers

Reprints were obtained from Nazir Ahmad, Professor and Head, Department of Civil Engineering, West Pakistan University of Engineering and Technology, Lahore, and added to the library. These reprints are listed below:

An Estimate of Water Consumption; Ahmad, Nazir and Akram, Mohammad

Water Conservation Studies for West Pakistan; Ahmad, Nazir

Evapo-Transpiration as a Function of Depth to Watertable and Soils; Ahmad, Nazir and Akram, Mohammad

Exploitation of Ground Water; Ahmad, Nazir

Publication of Irrigation Research Institute in West Pakistan (Pakistani Language)

Performance Tests on P. V. C. Pipe & Strainer; Ahmad, Nazir

Water Potential of West Pakistan - Its Present Development; Ahmad, Nazir

A Study of the Rise of Ground-water and its Salinity in the Irrigated Areas of Indus Plains; Ahmad, Nazir

Research on Water and Land for Survival; Ahmad, Nazir

Proceedings Southeast Asian Regional Conference on Soil Engineering (Dewatering of Deep Foundations); Ahmad, Nazir

Protecting Tubewell Strainer Against Corrosion; Ahmad, Nazir

Soil Erosion in the North Regions of West Pakistan; Ahmad, Nazir and Pervez, S. D.

Waterlogging and Salinity in the Indus Plain: Some Basic Considerations; Dorfman, Robert; Revelle, Roger, and Thomas, Harold

Some Experience with Tubewells in the Alluvium of the Indus Plains; Ahmad, Nazir

Some Problems of Ground-Water Resources of West Pakistan; Ahmad, Nazir