

INSTITUTE OF BEHAVIORAL RESEARCH

ANNUAL

REPORT

1970

TEXAS CHRISTIAN UNIVERSITY

THE INSTITUTE

The Institute was founded in 1962 to carry out a multifaceted program of research to advance scientific knowledge and application of the behavioral sciences. Closely integrated with the academic programs of the University, particularly in psychology, research and graduate training are considered a joint enterprise. Student participation is encouraged in the research program.

Organizationally the Institute is independent of the departmental academic structure of the University. It is responsible to the Administration through the Vice Chancellor for Advanced Studies and Research. However, the policy of joint appointments of research staff members in academic departments is encouraged. Participation of other faculty in ongoing projects and in multidisciplinary activities has added to the posture of the Institute to undertake a wide range of studies.

THE INSTITUTE STAFF

Faculty and Staff Members

S. B. Sells, Ph.D. Research Professor and Director
R. G. Demaree, Ph.D. Professor of Psychology, Research Scientist
George W. Joe, Ed.D. Assistant Professor of Psychology, Associate Research Scientist
Steven G. Cole, Ph.D. Assistant Professor of Psychology, Associate Research Scientist
Dennis D. Simpson, Ph.D. Associate Research Scientist, Assistant Professor
Deena Watson, M.A. Assistant Research Scientist
Anne Curby, B.A. Assistant Research Scientist
Lee B. Murdy, Doctoral Candidate. Assistant Research Scientist and American Airlines Research Fellow
Thomas S. Brown, Ph.D. Assistant Research Scientist (Terminated September 1, 1970)¹
Ronald S. Neman, Doctoral Candidate. Assistant Research Scientist and RSA Research Fellow
Helen F. Sells, A.B. Research Editor and Business Manager of Multivariate Behavioral Research

Consultants

C. Gunnar Blomqvist, M.D. Assistant Professor of Medicine, Department of Internal Medicine, The University of Texas Southwestern Medical School
Paul Minton, Ph.D. Chairman of the Department of Statistics, Southern Methodist University
Virginia Vollmer, Ph.D. Instructional Communications, University of Texas Southwestern Medical School
James E. Wicker, M.A. Head of the Human Factors Laboratory, General Dynamics (Consultant in Instrumentation)
Carl Peters, B. S. Manager of Operations, Telpar, Inc. (Consultant in Systems Programming)

¹now at Drury College, Springfield, Missouri

Research Fellows and Graduate Assistants

Lester W. Barnett, Jr. RSA Research Fellow
Rasselas W. Brown. Airline Research Program Graduate Assistant
Edwin T. Cornelius. RSA Research Fellow
Gary James Giles. RSA Research Fellow
Candyce A. Greer. Family Planning Research Fellow
Donald K. Kersey. Airline Research Program Fellow
Allan F. Neil. RSA Research Fellow
Arnold E. Nelson. RSA Research Fellow
Thomas N. McGaffey. NASA Program Research Fellow
Ronald E. Trego. NASA Program Research Fellow
John W. Porter. University Fellow
J. Arthur Woodward. NDEA Fellow, Graduate Assistant (Humble)
Ludy T. Benjamin. RSA Research Fellow (Terminated August 15, 1970)²
Gary E. Brown, Ph.D. RSA Research Fellow (Terminated August 15, 1970)³
Larry R. Jernigan, Ph.D. RSA Research Fellow (Terminated September 1, 1970)⁴
Sam H. Lane, III, Ph.D. RSA Research Fellow (Terminated September 1, 1970)⁵
Dorothy Lothar. Narcotic Addiction Program Research Fellow (Terminated June 1, 1970)
Henry Orloff, Ph.D. RSA Research Fellow (Terminated September 1, 1970)⁶

Programming Staff

H. Garland Jones, Programming Staff Coordinator
Donald P. Will, Jr., A.B. Programmer
Mary Ann Harris, B.A. Programmer
David Mueller, Programmer
Richard P. Norton, B.B.A. Programmer
Charles Kee, Programmer
Daniel Miller, Programmer (Terminated May 1, 1970)

²now at Nebraska Wesleyan College, Lincoln, Nebraska

³now at University of Tennessee, Martin, Tennessee

⁴now at Southern Methodist University, Dallas, Texas

⁵now at Cleveland State University, Cleveland, Ohio

⁶now at Eastern Michigan University, Ypsilanti, Michigan

Research Assistants

May D. McReynolds, A.B. Airline Research Program
Janice Neman, A.B. NASA, Directory of Drug Abuse Treatment
Agencies
Ann Thom, M.A. Drug Abuse Programs, Family Planning Program
Janice A. J. Brittain, B.A. Narcotic Addict Reporting Program
Jane Modianos. Narcotic Addict Reporting Program
Rosemary S. Nelson, B.A. Librarian, Research Assistant
Ellen B. Flexman, A.B. Family Planning Program
Sandra Barnett. Narcotic Addict Reporting Program (Terminated
September 1, 1970)
Jerry Cornelius. Airline Research Program (Terminated September
1, 1970)
Kay Durbin. Narcotic Addict Reporting Program (Terminated
November 1, 1970)
Phyllis Hopkins, M.A. Airline Research Program (Terminated
October 1, 1970)
William Maitulaitus, M.A. Airline Research Program (Terminated
May 1, 1970)

Supporting Staff

Janice Fox, IBR Secretary
Mary Louise McQuade, Secretary
Virginia Lederer, Secretary
Robin McReynolds, Secretary
Margaret Porter, Typist
Laurel M. Arnold, Typist
Christine Dunwoody, Key punch Operator
Nancy Forbes, Key punch Operator
Janet Bretell, Key punch Operator (Terminated August 1, 1970)
Diana Crowder, Typist (Terminated July 1, 1970)
Joy Heiliger, Secretary (Terminated August 31, 1970)
Barbara McClellan, Coder (Terminated August 1, 1970)
Becky Millican, Secretary (Terminated December 31, 1970)
B.J. Murray, Typist (Terminated September 1, 1970)

Undergraduate Assistants

Cheryl Shackelford, Coder, Narcotic Addict Reporting Program
Steven Shepherd, Coder, Narcotic Addict Reporting Program
Patricia Hill, Typist, Airline Research Program
Sandra Lasley, Account Secretary, IBR
John Norman, Statistical Clerk, Narcotic Addict Reporting Program
Jo Ann Wier, Statistical Clerk, Narcotic Addict Reporting Program
Sharon D. Hobbs, Coder, Family Planning Program
Sondra Kaye Jordan, Coder, Family Planning Program
George Grigsby, Coder, Family Planning Program
Richard Doty, Coder (Terminated December 1, 1970)
Mollie Gates, Clerk (Terminated July 1, 1970)
Janine Watson, Typist (Terminated July 1, 1970)
Susan Beard, Library Clerk (Terminated January 15, 1970)
Sandra Cotton, Typist (Terminated June 4, 1970)
Susan Gargiulo, Statistical Clerk (Terminated March 13, 1970)
Kenny McQuade, Clerk (Terminated February 1, 1970)
Lucy Turner, Typist (Terminated March 18, 1970)

THE INSTITUTE FACILITIES

Buildings. The Institute is located on the East Campus of the University. Up to the end of 1970, it occupied two buildings which together provided approximately 8000 square feet of office, laboratory, library, and administrative space. The main building is a handsome Armco Steel, one-story structure completed in 1968. During 1970, it housed the offices of the director, administrative staff, Multivariate Behavioral Research, research staff members, programming staff, and the IBR Technical Library. The Annex is a refurbished World War II, frame building in which research staff, graduate research fellows, the Biomedical Research Laboratory, and secretarial offices have been located. Document storage facilities have been maintained in both buildings. A third, Armco Steel building, formerly occupied by the Cognitive Systems Institute, was transferred to IBR in January, 1971, relieving a serious overcrowding situation.

Library. The IBR Technical Library has an extensive collection of over 3000 reference and textbooks in psychology and behavioral sciences, 40 journals, many complete back to the 1930's, Air Force, Army, Navy, NASA, and other Technical Report Series, and reprints. The library is used primarily by IBR staff and graduate students, but is available to the University community.

Biomedical Research Laboratory. This specially equipped laboratory is located in the Annex (Building 4). It includes an isolated, electrically shielded, sound-proof test room adjacent to a fully equipped control room. The control room has visual access to the test room by way of a one-way mirror and contains equipment for recording physiological measures such

as heart rate, respiration, blood pressure, skin resistance and peripheral blood flow. The recording equipment includes two six-channel physiographs and two single-channel recorders.

The control room also contains an analog-to-digital data acquisition system which records up to 16 channels of continuous data in digital form on tapes which can be processed by the IBM 1800 computer. Auxiliary equipment items include an analog computer, oscilloscopes, a relay-type logic network and audio tape recorders.

Data Processing. The Institute has its own equipment for key punching and verifying program and data card decks. Computations are carried out using IBM 1800, 1401, and 1620 computers at the TCU Computer Center, on campus, the IBM 360/50 computer at the University of Texas at Dallas, and other off campus equipment as needed.

The extensive and well-documented IBR Program Library is maintained in the main building and is available to research workers without restriction. The Program Library maintains a collection of statistical programs which complements those maintained by the TCU Computer Center. The programs in the library can be easily adapted to meet most project requirements.

PUBLICATIONS

IBR Report Series. The Institute maintains an IBR Technical Report Series, based on research completed under grants, contracts, and independent study by staff members and students. These are distributed to a regular mailing list and in most cases are condensed for more formal publication. A number of books published by the TCU Press and by IBR are also distributed through the Institute.

Multivariate Behavioral Research. This quarterly journal, published by the Society for Multivariate Experimental Psychology through the TCU Press, was founded in 1966. Volume 5, 1970, was distributed to over 700 subscribers in the United States and over 40 foreign countries. The offices of the Managing Editor and Business Manager are housed at IBR.

THE INSTITUTE PROGRAM

Founded in 1962, the IBR has conducted a broad program of basic and applied research in the behavioral sciences. The overall program also involves educational activities, including formal training programs at the graduate and post-doctoral levels; as well as special services and consultation with industry and governmental departments. Several of the IBR staff members hold joint appointments in the Department of Psychology and work closely with doctoral candidates, many of whom are supported by Research Fellowships through IBR research grants and contracts.

Research Program

The areas of basic and applied research pursued during recent years reflect staff interests as well as IBR response to social needs reflected in requests for information and assistance from individuals and sponsoring organizations. The major scientific focus involves substantive involvement with theoretical as well as applied problems of human personality and social behavior as well as methodological work in multivariate analysis, measurement, and large-scale data management. Current programs involve drug abuse and narcotic addiction, behavioral aspects of illness, psychophysiology and psychopharmacology, family planning and population problems, aerospace personnel, training, and organizational problems, industrial personnel and management problems, public housing, human ecology, and multivariate statistical methodology. Brief descriptions of major funded projects are included below.

Drug Abuse and Narcotic Addiction. Taxonomic Study of Narcotic Addiction Treatment Programs. In June, 1970, the National Clearinghouse for Mental Health Information published the first Directory of Narcotic Addiction Treatment Agencies in the United States, 1968-1969, by Deena Watson and S. B. Sells, with the assistance of an extensive staff, including C. Wade Harrison, Ph.D.,

Harry Wexler, M.A., Henry Kaplowitz, M.A., and Carl Anderson, Ph.D. (Consultant), field workers; George W. Joe, statistical consultant; and Candyce Greer, Virginia Lederer, Dorothy Lothar, Sarah Marlow, Janice Neman, and Ann Thom, editorial assistants. This was completed under Mental Health Grant 14230, National Institute of Mental Health and was based on an extensive data compilation which served also as the source of two scientific reports. One was a taxonomic analysis of narcotic addiction treatment programs, by Dr. Joe, which is being published as a TCU Press Behavioral Science Monograph. The other was a paper presented at the Third Annual Conference on Methadone Treatment in New York, in November, 1970, on the varieties of methadone programs, showing a number of consistent patterns of organizational approach. This paper, by Dr. Sells and Miss Watson is in press in the Conference Proceedings. This grant was funded at \$190,000. for a three year period.

Narcotic Addict Reporting Program. Beginning in mid-1969, following pilot studies during the preceding year, the IBR has developed and maintained a Narcotic Addict Reporting Program, involving a computerized file incorporating initial Admission reports and bimonthly Status Evaluation reports on all addict patients accepted for treatment at a number of designated treatment programs supported by the National Institute of Mental Health. Beginning with six programs in 1969, the Program was expanded to sixteen in 1970 and is expected to reach thirty or more agencies reporting in 1971. During the latter part of 1970 the data available for analytic studies focused on the evaluation of outcomes of different treatment approaches and of various patient-staff-community configurations had matured to a point where such studies were initiated, thus implementing the major purpose of the computer file. Initial designs for the computer data system incorporated in this project were developed by Hugh Angle, Ph.D., and modified and expanded by Anne Curby, who has been the Project Director since September, 1969. Dr. Joe is the Research Coordinator for the evaluation studies and in June, 1971, Miss Watson will assume responsibility for documenting and interpreting the treatment approaches of the reporting agencies. Mary Ann Harris and Janice Brittain have assisted Mrs. Curby in the data collection and input phases; Charles Kee has worked with Mrs. Curby and Dr. Joe on data retrieval and analytic programs. In 1971, the budget of this project, funded by NIMH under Contract HSM 42-69-6, will approach \$200,000. per year.

National Directory of Drug Abuse Treatment Facilities. The tremendous recent escalation of the "drug scene" in the United States has led both to widespread interest in seeking help for youth and adults involved with illicit and harmful drug habits and practices and to simultaneous expansion of treatment facilities throughout the country. In order to provide information to those seeking and making referral and at the same time to have available a nationwide register of treatment facilities, the NIMH decided to compile a new Directory and commissioned the IBR to do so. Work on the Directory, which expands files begun with the earlier one, but includes treatment programs for all drugs of abuse, except alcohol, is under the direction of Deena Watson, who is assisted by Janice Neman. This project is Mental Health Contract HSM 42-70-37 and is funded at approximately \$60,000. The Directory will be completed during 1971 and is to be published by NIMH.

Other Health Related Behavioral Research. RSA Research Training Program. This Program, leading to the Ph.D. degree in psychology, with special emphasis on heart disease, stroke, and cancer, is now in its fifth year. Supported by the Rehabilitation Services Administration at around \$100,000. per year, the academic phase has been closely coordinated with the Department of Psychology, while the research phase has been the responsibility of IBR. Dr. Demaree has functioned as Program Coordinator, assisted by Dr. Joe and, during 1970, by Dr. Simpson, who is a recent graduate of this program. Dr. Simpson contributed greatly to the development of the IBR Biomedical Laboratory while working on his dissertation on individual patterns of respiration and is now director of this laboratory, in which several of the RSA trainees are carrying out supervised studies under his direction. One such study, on alteration of respiratory patterns during a reaction time task, will be presented by Arnold Nelson at the Spring, 1971 meeting of the Southwestern Psychological Association.

Dr. Simpson's independent research has demonstrated that individual respiratory patterns are almost as unique as fingerprints and he is currently engaged in studies designed to quantify these patterns. A preliminary report on this research is to be presented at the Southwestern Psychological Association meeting by Edwin Cornelius. Because respiration has effects on other bodily activities involving attending and listening, Dr. Simpson and several graduate research

fellows are also studying ways to train people to change their respiratory patterns to more effective ones. A projected project, in cooperation with TCU's Starpoint School, will attempt to teach young children, who have learning disabilities, to breathe in a manner conducive to efficient learning. Dr. Demaree, Dr. Simpson, and Mr. James Wicker, in collaboration with Professor Selby Evans (Psychology), have developed plans for quantitative analysis of psychophysiological response tracings that have important implications in the area of lie detection.

An important recent study by one of the RSA Fellows was a field survey of nonrespondents in the Tarrant County Mass Rubella Immunization Program, by Lester W. Barnett, Jr., in collaboration with Dr. Joe, Professor William D. Emery (Sociology), and Dr. Sells. Invaluable assistance was given by the Fort Worth School System in providing data needed for sample design and by PTA members, who conducted followup interviews subsequent to the distribution of a mail questionnaire. Significant results related nonresponse to socioeconomic factors and guides for improved coverage of impoverished segments of the city and county population were pointed out for future survey use.

Allan F. Neil, another RSA Fellow, working under Dr. Demaree, completed a study of the Social, Medical, and Demographic Characteristics of Obstetric Patients at John Peter Smith Hospital, Fort Worth, Texas, which has important implications for strategies to increase the effectiveness of prenatal care in the community. Mr. Neil made an extensive comparison of the characteristics of mothers delivered at John Peter Smith Hospital who did and did not attend the Prenatal Clinic. The results of his survey have been of particular interest to the hospital medical staff in planning expanded services of maternal care.

The extent to which involvement in the RSA training program has increased the commitment of IBR to health related behavioral studies is worthy of comment. One of the most promising developments involves interesting and important applications of the respiratory research to problems of heart disease, which are being pursued by Dr. Demaree and Dr. Simpson. Others have arisen as a result of discussions with the Peter Smith medical staff; audiovisual training materials, such as the film strip on Prenatal Care and related topics, prepared by Dr. Vollmer, Mr. Neil's study, and a number of new research plans, developed by

Aerospace Research Related to Long-Duration Missions. For several years IBR staff members have carried out studies of personnel characteristics, group behavior, and factors related to isolation, confinement, and stress, focused on problems of long-duration space missions. This grant has been funded at the level of around \$30,000. per year and has resulted in a number of contributions to the literature on personal space, crowding, social system analysis, isolation, and confinement, including papers published by NATO, NASA, and the National Academy of Sciences.

The emphasis of the research in 1970 was primarily on factors related to crew selection for extended isolation and confinement (for simulation studies initially) and also on continuation of social system analysis. Ronald Trego, a doctoral candidate, whose dissertation is based in part on personal space measures developed under this grant, has completed an extensive review of personality factors conducive to effective adjustment to isolation and confinement, has assembled and administered an eight-hour battery of personality measures to two groups of volunteer ROTC students at TCU and the University of Texas at Arlington, for normative studies. Interrelations among these measures and some predictions, using available criterion indices of relevant behavior will be made.

A related study, by Dr. Simpson, Professor Donald Dansereau (Psychology), and Gary Giles (RSA Fellow), involves the physiological effects of transcendental meditation. There is currently widespread professional as well as popular interest in the Eastern philosophies, particularly with reference to the hypothesis that persons who have attained the ability to "meditate" can actually control, to some extent, their physiological functions. This and related hypotheses have not yet received adequate scientific test, despite their popular acceptance. The current experiment involves volunteers from the ROTC group tested by Mr. Trego, who are being trained in meditation by a licensed teacher, Bob Shaw, who studied with Maharishi Mahesh Yogi. When the training is completed, physiological measures will be compared under a number of experimental conditions. James McGuinness has been a Graduate Assistant for this study in the IBR Biomedical Laboratory. Should the results of this study be positive, they would have significant implications both for selection and preparation of men on long-duration space missions, who might be better able to attain needed composure and serenity in their stressful, enforced isolation.

Dr. Sells and Dr. Demaree in conjunction with various JPSH staff members, have resulted. The Family Planning Evaluation project, discussed below, is another result.

Family Planning Program Evaluation and Research. During 1969 the IBR was invited by the Administrator of the Tarrant County Hospital District to subcontract the evaluation phase of a new Family Planning Program for which funds were being requested. This was incorporated in the Program, with an initial budget of \$40,000. and Dr. Steven G. Cole, a recent Ph.D. in social psychology at Michigan State University, was appointed as of 1 September, 1970, as Project Director, with the title of Associate Research Scientist and also as Assistant Professor of Psychology. Under Dr. Cole's direction, a computerized case file has been established as a basis for accounting for program participants and outcomes and for research on factors related to outcomes in the family planning context. In addition, Dr. Cole, with the assistance of Ann Thom and Ellen Flexman, Research Assistants, and Candyce Greer, Research Fellow, has carried out field studies of organizational climate at the Family Planning and Planned Parenthood Clinics, and a study of women who fail to keep clinic appointments. At the end of the year, the staff was expanded with the appointment of Rosemary Nelson and David Bryon as Graduate Research Assistants. Plans have been made to present a symposium on family planning research at the 1971 meeting of the American Psychological Association in Washington and to broaden this program in the area of population research.

Psychological Research for Industry. The IBR program in industrial psychology has been expanded to include studies of management and organizational climate as well as personnel research, for a select group of corporations in the airline, banking, oil, and utility industries. Both Dr. Sells and Dr. Demaree have functioned as principals in these studies. Lee B. Murdy, holder of the first American Airlines Research Fellowship, has supervised the airline and bank studies, with the assistance of Edwin T. Cornelius, now an RSA Fellow, Donald K. Kersey, Research Fellow, Richard Norton and Rasselas W. Brown, Graduate Assistants, May D. McReynolds and Donald P. Will, Jr., Research Assistants, and a staff of clerks and statistical assistants. Dr. Joe and J. Arthur Woodward have worked with Dr. Demaree on projects supported by the Humble Oil and Refining Company.

The social system studies have been carried out by Tom McGaffey, doctoral candidate in social psychology, who is attempting to develop methods of representing organizations quantitatively in terms of a social system model developed by Dr. Sells. Mr. McGaffey is using academic departments at TCU and other civilian organizations as objects for his analyses. The significance of this work will lie in opportunities to carry out precise studies of variations among similar systems in relation to independent measures of organizational contingencies.

Research in Personality. In 1969, Dr. Sells, Dr. Demaree, and Mr. Will completed a major study of personality structure, involving extremely large-scale (600 variable matrices) factor analyses of personality questionnaire items derived from two leading trait-systems, those of J. P. Guilford of the University of Southern California and R. B. Cattell of the University of Illinois. The initial publication was a technical report to the U. S. Office of Education, which provided \$40,000. to implement the research. Publication of the study as a series of three articles in Multivariate Behavioral Research has been arranged; the first appeared in the October, 1970 issue and the second is scheduled for April, 1971. The third will follow later in 1971. As a result of these publications the IBR has received requests and has furnished computer programs for large matrix analysis to a number of other investigators. Further studies, using the data produced in this research, are in progress.

Of major importance in relation to theory and research in the so-called affective domain (personality - emotions - motivation) is a research grant, with Dr. Sells as principal investigator, from the National Center for Educational Research and Development, U. S. Office of Education, involving a critical review of research in this area and recommendations to guide future research. This investigation was set up with an advisory committee of eminent scientists and involves the establishment of task groups of leading investigators in specific areas to review the state of their respective areas and recommend emphases in new research in problem areas in which they have recognized expertise. This program, funded at close to \$85,000. will carry on through mid-1972, and has enlisted the cooperation and participation of a substantial number of outstanding psychologists from all regions of the United States.

For a number of years the IBR has been active in research related to the national health survey activities of the National Center for Health Statistics (Public Health Service). The Center has published a monograph which evaluated the psychological measures in Cycle II of the Health Examination Survey (NCHS Series 2, No. 15, 1966) and two IBR technical reports have summarized previous research on the development of objective scoring scales for the Thematic Apperception Test used in the Cycle II (age range 6 to 11) of the Health Examination Survey (Sells and Cox, 1966, and Brown and Sells, 1970). The last report is being prepared for publication by NCHS, with additions and revisions, by Mr. Neman, who succeeded Dr. Brown as Project Director in August. Mr. Neman has, meanwhile, directed the research on the Cycle III (age range 12 to 18) data and will extend the scales developed in Cycle II to the adolescent youth range. The scales of spoken language, as well as the emotionality scale developed in this research and the national norms presented for them, constitute a major scientific contribution. The total funding of this research has been in excess of \$200,000.

Human Ecology. Since 1962, principally with support by the Office of Naval Research, IBR staff members have developed and expanded conceptual formulations and a diverse research program on problems of the role of environmental forces in behavior. This program was initiated with a national symposium, in 1962, that was published in a book, edited by Dr. Sells (Stimulus Determinants of Behavior, Ronald Press, 1964), a series of studies of dimensions or organizational structure and behavior (by Sells and Findikyan), stress reviews, and research on the effects of weather on human behavior (by Findikyan and by Will), and research on organizations as social systems (Sells). During the past year negotiations have been carried out with the Navy NP Research Unit, San Diego, and the ONR for a new, coordinated research program involving concepts of organizational climate and social system analysis. Research on organizational problems, in industry and under the NASA program, is closely related and will be used in the planning of this program, in the Spring of 1971.

New Research. In conjunction with the Fort Worth Regional Office of the Department of Housing and Urban Development, the IBR staff have been developing a proposal for field research related to the

analysis of ecologic, design, population, and management factors that contribute to the effectiveness of public housing programs. In addition to this major proposal, new research plans have been proposed by staff members in the respective program areas described above.

Education and Training

As indicated previously, the research program of the IBR is deeply committed to graduate education through the involvement of students in on-going studies. Professors Sells, Demaree, Joe, Cole, and Simpson supervise research of graduate students and the entire staff serves in an education-training capacity insofar as participation in on-going research provides opportunities for tutorial instruction in research, strategy and design, planning of data collection instruments and procedures, sampling, organization, and handling of data, statistical procedures, computer programming, data processing and management, report writing, editing, and publication procedures.

The IBR Seminar, an inservice training program, meets weekly and is attended by faculty, staff, and student members of IBR as well as others who may be interested. The Seminar program features invited speakers as well as in-house presentations and discussions of current topics.

Research Training Program. The Research Training Program in Psychology (Rehabilitation Services Administration Grant No. RH2) has been a joint program with the Department of Psychology, in which the trainees (RSA Fellows) were screened by the Admissions Committee of the Psychology Department and admitted to the academic program of the Department, where they carried out their academic studies in Psychology, while at the same time they received additional research training and special instruction in behavioral aspects of health and illness through IBR. Doctoral degrees were awarded to six RSA Fellows in 1970: Gary E. Brown, Thomas S. Brown, Larry R. Jernigan, Sam H. Lane III, Henry Orloff, and Dennis D. Simpson. Ludy T. Benjamin, another RSA Fellow, had partially completed his dissertation when he had to report to his academic position at Nebraska Wesleyan College in September. All of the 1970 graduates accepted academic appointments as indicated in the staff roster.

Two additional RSA Fellows are expected to receive their Ph.D. degrees in 1971. These are Lester W. Barnett, Jr., and Ronald S. Neman. Fellows continuing in the Program will include Allan F. Neil, Edwin T. Cornelius, Gary James Giles, and Arnold E. Nelson.

In addition to the RSA Fellows, other graduate students attached to IBR who are expected to receive their Ph.D. degrees in 1971 include Lee B. Murdy, who has been a full-time staff member in 1970, Thomas N. McGaffey, and Ronald Trego; the latter two have been members of the staff of the NASA group. Miss Ann Thom, now a civilian employee of the U. S. Air Force at Lackland AFB, completed her M.A. in 1970.

Management Seminar. The 1970 TCU Management Seminar was the eighth session of this unique program, offered each summer for corporate executives, as part of the continuing education program of Texas Christian University. It was founded and directed jointly by Dr. Sells and the late Dr. Ike H. Harrison, Dean of the M. J. Neeley School of Business. Limited to twenty top-level corporate executives, the Seminar presents principles and practices reflecting applications of the behavioral sciences from the viewpoint of the chief executive officer of a corporation. This Seminar has enjoyed unusual popularity in the North Texas area and plans were made, following the 1970 session, to organize the Seminar alumni into a permanent association. Other TCU faculty members who have participated as members of the Seminar faculty include Professors John L. Wortham, Economics, Alexander A. J. Hoffman, Computer Sciences, Murray Rohman, Labor Relations, and A. Franklin Murph, Quantitative Methods in Management Decisions. Guest Lecturers have included O. Roy Stevenson, Senior Vice-President, Fort Worth National Bank, Financial Planning; Dr. Paul Ylvisaker, Professor of Political Science, Princeton University, Urban Problems; and Dr. M. Scott Myers, Texas Instruments, Inc., Motivation of the Work Force.

Consultation

IBR staff members have provided consultative services to Federal and local agencies, industry, and to academic and scientific research groups. The consultative services have included advice on scientific, professional, and management problems, bibliographic research and

reports, and computer programming, particularly with reference to management of large matrices. The IBR has aided faculty members in other departments of the University in preparation of research proposals and in data analysis and cooperated with private physicians in the community on research problems.

IBR SUPPORTED RESEARCH. Expenditures in 1970.

Research Training Grant, RH2, <u>Rehabilitation Services Administration</u>	\$ 88,476.
Critical Appraisal of Research in the Personality-Emotions-Motivation Domain, OEG 0-70-2665 (586), <u>U. S. Office of Education</u>	10,436.
Development of Objective Scales for the TAT used in the Health Examination Survey, PH-109-66-75, <u>National Center for Health Statistics</u>	14,101.
Taxonomic Study of Narcotic Addiction Treatment Programs. MH Grant 14230, <u>National Institute of Mental Health</u>	31,635.
Narcotic Addict Reporting System, MH 42-69-6, <u>National Institute of Mental Health</u>	65,091.
National Directory of Drug Abuse Treatment Facilities, MH-42-70-37, <u>National Institute of Mental Health</u>	20,447.
Social Structure and Group Behavior in Extended Duration Space Missions, NGR 44-009-008, <u>National Aeronautics and Space Administration</u>	22,443.
Airline Research Program	65,333.
Other Industry Studies	25,070.
Family Planning Evaluation Program, <u>Tarrant County Hospital District</u>	14,113.
Miscellaneous	4,092.
Total	<hr/> \$ 361,237.

PUBLICATIONS AND REPORTS 1970

BOOKS:

Watson, Deena and Sells, S. B. Directory of Narcotic Addiction Treatment Agencies in the United States. (NIMH) Prepared for the Center for Studies of Narcotic and Drug Abuse Division of Narcotic Addiction and Drug Abuse, National Institute of Mental Health. 162 pages.

CONTRIBUTIONS TO BOOKS:

Sells, S. B., Ph.D. and Gunderson, E. K., Ph.D. A Social System Approach to the Long Duration Space Mission. Prepared for the National Academy of Sciences Committee on Long Duration Space Missions. May 1, 1970.

REVIEWS:

Sells, S. B. Book Notes and Reviews in Psychology in the Schools, 1970.

PERIODICAL ARTICLES:

Hill, S. D. and Barnett, L. W. A comparison of visual and tactual discrimination learning of retarded and schizophrenic children. Journal of Special Education, 1970, 3, 417-424.

Neman, Ronald and Dixon, Theodore R. Stimulus generality in work association sets. Journal of Experimental Psychology, 1970, 83 (3), 506-507.

Sells, S. B., Demaree, R. G., and Will, Donald P., Jr. Dimensions of Personality: I. Conjoint factor structure of Guilford and Cattell trait markers. Multivariate Behavioral Research, 1970, 5, 391-422.

PERIODICAL ARTICLES SUBMITTED:

- Cole, Steven. Coalition preference as a function of vote commitment in some dictatorial "Political Convention" situation. Behavioral Science.
- Cole, Steven. Conflict and cooperation in potentially intense conflict situations. Journal of Personality and Social Psychology.
- Cole, Steven. A test of a model of uelative conflict. Psychology Review.
- Phillips, J. L., Cole, S. G., and Hartman, E. H. A uelative conflict. Psychological Review.

IBR TECHNICAL REPORTS:

- Arnoult, M. D. and Sells, S. B. An Evaluation of Behavioral Effects of WIN 25,978. (Sterling-Winthrop Research Institute)
IBR Research Report. No. 70-1.
- Barnett, Lester W., Jr. Placebo Responding Associated with Marlowe-Crowne Social Desirability Scale Scores. (Research Training Grant, SRS-RH2)
IBR Research Report. No. 70-17.
- Barnett, L. W., Jr., Joe, G. W., Emery, W. D., and Sells, S. B. Factors related to family participation in a community health program: The Tarrant County Mass Rubella Immunization Program. (Research Training Grant, SRS-RH2)
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- Day, Ronald M. Ship's Laws: Normative Structure for Isolated Groups. Condensed for Publication by Ronald E. Trego, August, 1970. (NASA Grant No. NGR 44-009-008)
IBR Research Report. No. 70-3.
- Joe, George W., Curby, Anne, and Sells, S. B. Selected Factors Related to Therapy Outcome in Treatment of Narcotic Addiction. July, 1970. (NIMH Contract No. HSM 42-69-6)
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- Joe, George W. A Typology for Narcotic Addiction Treatment Agencies: Results of a Taxonomic Study. (NIMH Grant No. MH-14230)
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- Lane, Sam, III, Harrison, C. W., and Sells, S. B. An Evaluation of the Psychological Impact Association with the Uncertain Future of a Narcotic Addiction Rehabilitation Center. (NIMH Grant No. 14230)
IBR Research Report. No. 70-12.
- McGaffey, C. N., and Trego, R. E. Personal Space: A Critical Review. (NASA Report No. 16, NASA Grant NGR 44-009-008, June, 1970)
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- McGaffey, C. N., and Trego, R. E. The Relationship Between Crowding and Personal Space. (NASA Research Note No. 14, NASA Grant NGR 44-009-008, March, 1970)
IBR Research Note. No. 70-5.
- McKay, Quinn G. and Sells, S. B. Overview of Performance Evaluation, August, 1970. (Eastern Airlines, Inc.)
IBR Position Paper. No. 70-7.
- Neil, Allan F. Social, Medical and Demographic Characteristics of Obstetric Patients at John Peter Smith Hospital, Fort Worth, Texas. September, 1970. (Research Training Grant, SRS-RH2)
IBR Research Report. No. 70-13.
- Rawls, J. R., McGaffey, C. N., Trego, R.E., and Rawls, D. J. Personal Space and Its Effect Upon Performance Under Different Degrees of Closeness. (NASA Technical Report No. 13, NASA Grant NGR 44-009-008, March, 1970)
IBR Research Report. No. 70-4.
- Sells, S. B., Murdy, Lee B., and Brown, Thomas S. Fort Worth National Bank Management Survey, (Fort Worth National Bank), 4 volumes.
IBR Research Report. No. 70-10.
- Sells, S. B. Space Scientist vs Astronaut - Behavioral Aspects. (Presented at APA Symposium, September, 1970, supported by NASA Grant No. NGR 44-009-008)
IBR Report. No. 70-16.

Simpson, Dwayne. An Investigation of Patterns of Respiratory Behavior. (Dissertation supported by Research Training Grant, SRS-RH2)
IBR Research Report. No. 70-11.

Trego, R. E., McGaffey, C. N., and Rawls, J. R. Personal Space and Variation in Size of An Enclosed Area: A Partial Replication and Extension. (NASA Research Note No. 15, NASA Grant NGR 44-009-008, March, 1970)
IBR Research Note. No. 70-6.

Trego, R. E. and Sells, S. B. Toward Selection for Long-Duration Isolated Missions. A Literature Review. (NASA Report No. 17, NASA Grant NGR 44-009-008, June, 1970)
IBR Research Report. No. 70-9.

PAPERS PRESENTED AT MEETINGS

- Barnett, L. W. and Smith, R. K. Examiner and subject racial characteristics as determinants of Marlowe-Crowne Social Desirability Scale scores. Paper read by Lester Barnett at the Southwestern Psychological Association Convention. St. Louis, April, 1970.
- Cole, S. G. The Resolution of Intense Conflict. Peace Research Society International, East Lansing, Michigan, December, 1970.
- Sells, S. B. Requirements for a Viable Micro-Social System. Prepared for the National Academy of Sciences Committee on Long Duration Space Missions. January, 1970.
- Sells, S. B., Ph.D. and Gunderson, E. K., Ph.D. A Social System Approach to the Long Duration Space Mission. Prepared for the National Academy of Sciences Committee on Long Duration Space Missions. May 1, 1970.
- Sells, S. B. Space Scientist vs Astronaut-Behavioral Aspects. Presented at APA Symposium. September, 1970.
- Watson, Deena and Sells, S. B. A Spectrum of Approaches in Methadone Treatment: Relation of Program Evaluation. Presented at the Third National Conference on Methadone Treatment, Panel on Epidemiology and Methadone. New York, New York, November 14, 1970.

VISITING LECTURERS AND CONSULTANTS

March 9	-	E. K. E. Gunderson, Ph.D. and Blair McDonald, Ph.D. Navy, NP Research Unit, San Diego Social Systems Analysis
May 18	-	Peter Smith Hospital Group Family Planning
June 17	-	Dr. Philip Person National Institute of Mental Health Washington, D. C. Drug Research
July 1	-	Mr. Elliott Bovelie and Mr. Preston Proctor Center for Human Services, Washington, D. C. Drug Research
October 18	-	Dr. Philip Person National Institute of Mental Health Washington, D. C. Drug Research
October 28	-	Peter Smith Hospital Group Family Planning
November 18	-	National Institute of Mental Health Site Visit Team Drug Research
November 24	-	Dr. James Hedlund, Colonel, United States Army Walter Reed General Hospital, Washington, D.C. "Mental Health Computer Applications Research in the Army Medical Department "

MEETINGS ATTENDED

- Ludy T. Benjamin - January 22, 1970. Lecture by Dr. Michael Debakey on "Artificial Hearts " at Texas Instruments, Inc., Dallas, Texas.
- Steven G. Cole - December 10-12, 1970. Annual Meeting of Peace Research Society, Michigan State University, East Lansing, Michigan. "The Resolution of Intense Conflict".
- R. G. Demaree - December 2-4, 1970. Regional Research Utilization Workshop, sponsored by the Texas Rehabilitation Commission, San Antonio, Texas.
- Lee B. Murdy - May 14-16, 1970. Kent State University, Comparative Administration Research Conference.
- S. B. Sells - January 14-16, 1970. National Academy of Sciences, Committee on Long-Duration Space Missions, Washington, D. C.
- January 26, 1970. Conference on Research on Evaluation of Treatment of Narcotic Addiction, NIMH, Washington, D. C.
- February 10, 1970. Colloquium address on "Definition and Measurement of Mental Health," Psychiatry Faculty and Residents, UT Medical Branch, Galveston, Texas.
- March 3, 1970. Conference on Directory of Narcotic Addiction Treatment Agencies, National Institute of Mental Health, Chevy Chase, Maryland.

Meetings Attended (cont.)

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| S. B. Sells | - | <p>March 17-19, 1970. Meeting of OE Affective Studies Review Panel, Washington, D. C.</p> <p>May 7, 8, 19, 1970. TESCO Management Conferences, Mineral Wells, Texas.</p> <p>June 8-9, 1970. ONR-Sponsored Conference on Organizational Problems, U. S. Navy NP Research Unit, San Diego, California</p> <p>June 21-27, 1970. Eighth Annual Management Seminar, Texas Christian University.</p> <p>September 4-8, 1970. American Psychological Association Annual Convention, Miami, Florida.</p> <p>November 14, 1970. Third Annual Conference on Methadone Treatment, New York, New York.</p> |
| Ronald E. Trego | - | <p>November 17-18, 1970. 90-Day Manned Test Symposium, Langley Research Center, Hampton, Virginia.</p> |
| Deena Watson | - | <p>January 30-31, 1970. First National Free Clinic Symposium, San Francisco, California.</p> <p>March 3, 1970. Conference on Directory of Narcotic Addiction Treatment Agencies, National Institute of Mental Health, Chevy Chase, Maryland.</p> <p>November 14, 1970. Third Annual Conference on Methadone Treatment, New York, New York.</p> |

1970 IBR SEMINARS

<u>Date</u>	<u>Speaker</u>	<u>Topic</u>
July 7	Sam H. Lane	The Role of Differential Patterns of Responses in Preference for Complexity
July 15	Thomas S. Brown	Correction for Overlap in Principal Component Loadings
July 23	Gary Brown	The Effects of Septal and Olfactory Bulb Lesions on Stimulus Reactivity
July 29	Larry Jernigan	The Development and Investigation of a Method for Removing the Effects of the Distribution of Mean Values from the Relationships Among Binary Variables
July 29	Dwayne Simpson	Investigation of Patterns of Respiratory Behavior
October 12	Ronald Neman	Comparisons Between Results Obtained in Two Different Association Tasks
October 19	Lee Murdy and Dr. S. B. Sells	The Concept of Organizational Climate
October 26	Edwin T. Cornelius	Canonical Correlations as a Perceptual Model
November 2	Dr. George W. Joe	Taxonomy of Narcotic Addiction Treatment Agencies

1970 IBR Seminars (cont.)

<u>Date</u>	<u>Speaker</u>	<u>Topic</u>
November 9	Ronald Neman	Comparison Between Single and Multiple Association
November 16	Dr. Steven G. Cole	Coalition Formation in Some Dictatorial Political Convention Situations
November 24	Dr. James Hedlund, Colonel, United States Army	Mental Health Computer Applications Research in the Army Medical Department
December 7	Ronald Trego	Operational 90-Day Manned Test of a Regenerative Life Support System
December 14	Lee Murdy	Concomitants of Organizational Climate