The purpose of this report was to review programs carried out by the Oak Ridge Associated Universities (ORAU) during 1969 and 1970 to help design, develop, implement, and evaluate various means for further strengthening traditionally Negro institutions of higher learning. The report summarizes two 4-week summer workshops for faculty members of Black institutions conducted during 1970 in Oak Ridge, and two 1-week workshops for administrators, held concurrently. The purpose of the workshops was to promote greater cognizance of national needs and related government programs through an examination of engineering, the natural sciences, social sciences, and the humanities as individual and collective sources of solutions to specific problems of national concern. An effort was also made to evaluate the relevance of existing governmental programs to scientific and technological capabilities of Negro schools. The report also: (1) traces chronologically the events that led to the 1970 activities and presents the activities and results of the 1969 workshops; (2) briefly discusses the 1970 post-workshop developments and activities; and (3) summarizes the accomplishments of the workshops and presents a projection of the ORAU's future role in activities with, and on behalf of predominantly Black institutions. (AF)
Oak Ridge Associated Universities is a private, nonprofit corporation sponsored by 41 colleges and universities in the South, three of which—Fisk University, Meharry Medical College, and Tuskegee Institute—are predominantly black institutions. The Association was chartered in the State of Tennessee in 1946 and operated for its first 20 years as the Oak Ridge Institute of Nuclear Studies, the pioneer among corporate university management groups of its type in the United States. ORAU conducts programs of education, information, and research under contract with the U.S. Atomic Energy Commission and other governmental and private agencies.

Knoxville College, which joined ORAU in presenting the 1970 Oak Ridge workshops for faculty and administrators of Negro institutions, is a predominantly black, four-year liberal arts college in Knoxville, Tennessee, which will celebrate its 100th anniversary in 1975.

Member colleges and universities:

Auburn University
Catholic University of America
Clemson University
College of William and Mary
Duke University
Emory University
Fisk University
Florida State University
Georgia Institute of Technology
Louisiana State University
Meharry Medical College
Mississippi State University
North Carolina State University
North Texas State University

Rice University
Southern Methodist University
Texas A & M University
Texas Christian University
Texas Woman's University
Tulane University
Tuskegee Institute
University of Alabama
University of Arkansas
University of Florida
University of Georgia
University of Kentucky
University of Louisville
University of Maryland
University of Miami
University of Mississippi
University of North Carolina
University of Oklahoma
University of Puerto Rico
University of South Carolina
University of Tennessee
University of Texas
University of Virginia
Vanderbilt University
Virginia Commonwealth University
Virginia Polytechnic Institute and State University
West Virginia University
1969–70

oak ridge workshops for faculty
and administrators of traditionally
negro institutions

by W. W. Grigorieff
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B. 1969 Workshop Schedule, Contributors, and Participants—41
The purpose of this report is to review programs carried out by Oak Ridge Associated Universities (ORAU) during 1969 and 1970 to help design, develop, implement, and evaluate various means for further strengthening traditionally Negro institutions of higher learning.

The original impetus for this effort was provided by Z. W. Dybczak, dean of engineering at Tuskegee Institute, at the conclusion of a meeting of the ORAU Engineering Education Committee in September 1968 in New Orleans. Dr. Dybczak suggested that ORAU look into, and “do something” about, helping institutions with predominantly black enrollments to improve their offerings.

The activities described herein were made possible by the substantial and substantive support of the Division of Nuclear Education and Training of the U. S. Atomic Energy Commission, and especially of its director, Elliot Pierce, and his colleagues. Russell Poor and George Courtney. Of equal importance were the contributions made by Marion Bowden, assistant for equal employment opportunity programs in the office of the AEC general manager, and by Herman M. Roth, director of the Laboratory and University Division of AEC’s Oak Ridge Operations.

Particularly significant as well to the success of this venture was the early endorsement by the Federal Interagency Committee on Education (FICE) and the energetic and enthusiastic cooperation of its former executive director. Emery F. Bacon. Mr. Bacon and his staff were uniquely instrumental in guiding our planning and in generating interest and financial support through responsible officers of the Office of Education, including Willa B. Player and Paul Carnell, of the Division of College Support, Bureau of Higher Education, and William Thomas Carter, of the Bureau of Educational...
A national advisory committee of educators likewise contributed wise guidance to the project at the planning stage and several of its members participated actively in the Oak Ridge program.

Knoxville College, its president, Robert L. Owens, and particularly Professor William H. McArthur, chairman of the College's Division of Natural Sciences and Mathematics, made unique contributions to the 1970 workshops; without them the program could not have been launched, nor have achieved the success that it did. Hardy Liston, Jr., assistant vice chancellor of academic affairs at the University of Tennessee, Knoxville, played a major role in the 1969 activities as the first ORAU professor in residence (then on loan from North Carolina A & T State University) and as a program consultant in 1970.

William G. Pollard, executive director of ORAL, provided firm support in developing the program and its various modifications.

It is a pleasure also to acknowledge our appreciation to Professor Arthur Victor Jett, Jr., of Tuskegee Institute, who was ORAU professor in residence during the planning and conduct of the 1970 workshops, to Victor Montgomery of Howard University, and to Marvin Hobby of Georgia Power Company, who were primarily responsible, under Dr. McArthur's direction, for the 1970 program. My warm thanks extend to Lana Kirk and Susie Stevens who were constructively involved, and to Sharon Herrell of this office, whose smooth and efficient effort was invaluable.

It is my hope that this activity may bring us closer to a better understanding of the problems and aspirations of traditionally Negro institutions, and to the solution of some of these problems in the '70's.

W. W. Grigorieff
Assistant to the Director
Oak Ridge Associated Universities

Members of the advisory committee were: Elias Blake, Jr., president, Institute for Services to Education, Inc., Washington, D.C.; Herman R. Strano, president, Lincoln University, Lincoln University, Pennsylvania; Lewis C. Dowdy, president, North Carolina A & T State University, Greensboro; Arthur Hansen, president, Georgia Institute of Technology, Atlanta; Benjamin E. Mays, president, Atlanta Board of Education; Samuel M. Nabori, director, Southern Fellowship Fund, Atlanta; Joseph D. Patterson, president, Moton Memorial Foundation, New York, New York; Willa B. Player, director, Division of College Support, U. S. Department of Health, Education, and Welfare, Washington, D.C.; Herman B. Smith, director, Office for the Advancement of Public Negro Colleges, Land-Grant Colleges Association, Atlanta; Rembert E. Stokes, president, Wilberforce University, Wilberforce, Ohio; Ralph W. Tyler, director emeritus, Center for Advanced Study in Behavioral Sciences, Stanford University, Stanford, California; and Walter Washington, president, Alcorn A & M State University, Lorman, Mississippi.
The purpose of this report is fourfold: 1) to summarize two four-week summits: workshops for faculty members of black institutions, conducted during June and July 1970 in Oak Ridge, and two one-week workshops for administrators, held concurrently with the faculty sessions; 2) to chronologically the events that led to the 1970 activities by presenting, in capsule form, the purpose, activities, and results of the 1969 workshop; 3) to sketch briefly the 1970 post workshop developments and activities; and 4) to summarize the accomplishments of the workshops and present a projection of ORAU's future role in activities with, and on behalf of, institutions of predominantly black enrollment.

The 1969 activities were supported directly by the Division of Nuclear Education and Training of the U.S. Atomic Energy Commission. The expanded activities of 1970 continued to benefit from the direct financial assistance of that division; and, in addition, the Office of Education provided funds in support of the program to the workshop cosponsor, Knoxville College, through 1) the Bureau of Educational Personnel Development, Division of Program Resources, and 2) the Bureau of Higher Education, Division of College Support. The Federal Interagency Committee on Education, on which are represented the AEC, Office of Education, and other agencies with educational missions, served both in an advisory and a coordinating role with respect to this federal participation in the Oak Ridge program.
The 1970 workshops, under the title, "Response to the Needs of Society in the 1970s," were designed to open new lines of development for traditionally black institutions, by broadening their horizons. Participants were exposed to the teaching and research available to them through both governmental and private resources. Moreover, these workshops provided the needed time for participating faculty and staff to become acquainted, to interact, to exchange ideas, and to identify common problems. Participation in the workshops was defined as an unpredictable result: the return of previously developed through the workshops with new ideas for their institutions. In a number of cases, the participants got to know colleagues from institutions within the state and less than 100 miles from their own.

A highly interesting dimension of the workshops was the inclusion, as full-fledged participants, of undergraduate and graduate students from Knoxville College. They were provided with a highly stimulating and significant stimulus to the discussions, which were taken as part of a triad among administrative faculty and student participants. Their activities included the preparation of a prospectus for a project of neighborhood service and the planning for a national leadership conference to be held in the late 1970s.

Fig. 1 Invitations and Applications, 1970 Oak Ridge Workshops for Traditionally Negro Institutions
The 1970 workshops, under the title, "Higher Education’s Response to the Needs of Society in the ’70’s," served to open new lines of development for the academic programs of black institutions, by broadening the acquaintance of participants with the teaching and research resources available to them through both governmental and private sources. Moreover, these workshops provided much-needed time for participating faculty and administrators to become acquainted, to interact, to exchange ideas, and to identify common problems. Participants themselves defined as an unpredicted result the relationships they developed through the workshops with faculty in other institutions. In a number of cases, they met for the first time and got to know colleagues from institutions in the same state and less than 100 miles from their own campuses.

A highly interesting dimension of the 1970 program was the inclusion, as full-fledged participants, of a team of four students from Kroxville College. They provided a striking and significant stimulus to the discussions, especially as part of a triologue among administrators, faculty, and students. Their activities included the development of a prospectus for a project of neighborhood improvement and the planning for a national leadership conference.
for students from black institutions to consider causes of and solutions to problems resulting in campus unrest.

Background

A letter to presidents and deans of black institutions in December 1969, exploring their potential interest in a summer workshop program in Oak Ridge, drew 160 expressions of interest by mid-January 1970. Funding by the Office of Education was announced early in March, thus insuring tentative support offered previously by the Atomic Energy Commission. The Federal Interagency Committee on Education (FICE) arranged a broadly representative planning meeting on March 11 in Washington and for a smaller task force a week later. Announcements then were mailed on April 10 to senior academic officers of more than 120 predominantly black colleges and universities.

Although there was a question whether black institutions would respond favorably to the workshops—and although the grant award was late in coming—by May 15, just five weeks after the original mailing, ORAU had received 326 applications for the limited openings; late nominations brought the final figures to 341 applicants from 92 institutions (Fig. 1).

Available funds made it possible to extend invitations to 80 faculty members and 113 administrators. Although originally three workshop sessions of 24 participants each had been planned, the unexpectedly enthusiastic response by the black academic community necessitated modifying these plans to the following final format. Two concurrent workshops were held June 8–July 3, 1970, for 33 faculty members, and June 15–19 for 17 administrators. These were followed in July by two workshops involving 39 faculty, July 6–31, and 40 administrators, July 20–24. A total of 129 faculty and administrators from 67 black colleges in 20 states and the District of Columbia participated in the summer program. Participants received a stipend of $75 per week, with a weekly allowance of $15 per dependent (up to a maximum of 2), and an allowance of $16 per day for living expenses while in Oak Ridge.

Those attending were from a variety of disciplines in the natural sciences, humanities, and social sciences, with individual interests ranging from physics to philosophy. Natural sciences were represented by 42 participants; social sciences by 21; and the humanities by 16. Among participants in the one-week sessions for administrators, there were two presidents, one vice president, 16 deans, and 38 other administrators.

There were 59 workshop speakers who presented lectures and/or participated in group discussions. Selected on the basis of their knowledge and expertise and ability to communicate, the speakers represented the U.S. Atomic Energy Commission, Department of Health, Education and Welfare, Oak Ridge Associated Universities, Oak Ridge National Laboratory, University of Tennessee, and several public corporations.

Purpose

The purpose of the workshops was to promote greater cognizance of national needs, and related government programs, through an examination of engineering, the natural sciences, social sciences, and the humanities as individual and collective sources of solutions to specific problems of universal concern. The aim was to provide a multidisciplinary focus upon the human condition in the contemporary world, and to develop a deeper
Understanding of the impact of science and technology upon society through a coordinated series of formal lectures, seminars, panel discussions, and participation in small work groups. This, in turn, led to a consideration of the relevance of existing governmental programs to scientific and technological capabilities of the traditionally Negro schools.

Program

Prominent federal administrators were brought to the seminars for detailed expositions of present programmatic and probable future involvement of their agencies in the leading action-centered issues that confront the country's scholars in this decade. Major topics of the sessions under the overall theme, "Higher Education's Response to the Needs of Society in the '70's," were: Man and His Institutions, Man and His Environment, Man and The World of Work, and The University's Response.

The program posed, and sought answers to, the essential question of how the participating institutions might gear their activities to address effectively and provide viable solutions to the problems confronting mankind and, particularly, black institutions themselves.

A significant result of the workshops has been the initiative shown by the participants, both during the workshop program and since, in identifying needs, formulating plans, developing projects, and following through on proposals both for individual and cooperative action to strengthen their institutions. Below are listed the major programs and projects developed and reported by the participants through April 1971. Together they represent grant and contract commitments by the Federal Government, principally through the Office of Education, Department of Health, Education, and Welfare, totaling $547,000.

Among 1970 workshop panelists were, from left, Herman M. Roth, director of the Laboratory and University Division of the AEC's Oak Ridge Operations; W. W. Grigorieff, assistant to the director, ORAU, the workshop director; Marion A. Bowden, assistant for equal employment opportunity programs to the AEC general manager; and George W. Courtney, Jr., chief of the University Relations Branch, AEC Division of Nuclear Education and Training.
PROGRAMS AND PROJECTS
DEVELOPED BY 1970 WORKSHOP PARTICIPANTS

Title and Principal Investigator

Training Program for Institutional Researchers,
(Mrs.) Freddie Groomes
Florida A & M University

Pre-law program to send history majors to Washington, D.C. for internships in the offices of senators and congressmen
Se Jin Kim
North Carolina Central University

Experiential Learning, an on-the-job training experience while enrolled in college
Bobby Downing
Knoxville College

Environmental Science Workshop for Science Teachers,
Charlie Smith
Jackson State College

Training in Sensitivity Through Human Ecology,
Willis Brown
Langston University

Cooperative Program in Allied Health Professions between Tennessee State University and Meharry Medical College

Training Program for Adult Educators
Tennessee State University

Correctional Services Program leading to the B.S. degree in Corrections
Lee State University

Status

Awarded $50,000, HEW

Awarded $2,000 planning grant, HEW

Awarded $47,000 planning grant, HEW

Awarded $12,000, HEW

Awarded $24,000, HEW

Approved by respective governing boards

Approved by Tennessee Board of Education and awarded $19,000 planning grant

Approved by Tennessee Board of Education
Title and Principal Investigator

Cooperative Program between Tennessee State University and the University of Tennessee—Nashville to establish the Southeastern Regional Training Center for Pupil Personnel Services Specialists

Operation Springboard,
L. C. Wood and Jean Manning
Paul Quinn College

Curriculum Development for Disadvantaged Students,
Cammie L. Sleet
The Shaw College at Detroit

Training Program in Cooperative Education for Administrators and Faculty of Developing Institutions
James N. Harris
Tuskegee Institute

Environmental Biology, a curricular innovation
W. I. S. Brown
Langston University

NI News Bulletin, abstracts of news items of interest to black institutions

Three mini-conferences for evaluation of 1970 workshops and follow up

Total funds awarded

Status

Awarded $160,000 planning grant

Awarded $75,000, HEW

Awarded $133,000, HEW

Awarded $25,000, HEW

Implemented

First issue mailed in January 1971 to participants in '70 workshops

Held during 1970–71 in Birmingham, Greensboro, and Memphis

$547,000
Ell F. Bacon, former executive director of the Federal Council for Education (FICE), addressed July participants on government programs that might support the academic development of black institutions.

Other promising proposals and projects resulting from the workshops and presently under review by granting agencies or being prepared for resubmission after preliminary review are:

- **Science and Technology and Human Survival.** Willis T. Brown, Langston University.
- **Developing a Sense of Community in Terms of Effective Utilization Indicators of Social Change.** Marcheta Z. Davis, Mary Holmes College.
- **Motivational Upgrading Program for the Administrators, Faculty, and Staff of Paul Quinn College.** L. C. Wood, Paul Quinn College.
- **Academic Achievement and Motivational Upgrading Program for Incoming Students of Paul Quinn College.** L. C. Wood, Paul Quinn College.
- **Consortium for Interinstitutional Cooperation.** Lillie K. Singleton, T. A. Lawson State Junior College.
- **Cooperative Projects and Humanities Course Exchange Between the University of Alabama and Stillman College.** Joyce O'Rourke, Stillman College.
- **Preparation of a Comprehensive Questionnaire to Identify Faculty Expertise in TNI's.** Wynelda E. Satisfield, T. A. Lawson State Junior College.
- **An Interdisciplinary, Inner-City Internship Training Program.** James T. Coleman, Southern University.
- **How to Help Young Drop-Outs Become Productive Citizens.** Odessa Nelson, Allen University.
- **An Assessment of the TNIs' Capabilities.** William H. McArthur, Knoxville College.
- **An Interdisciplinary Approach to Minorities' Environmental Problems.** Joe Hargrove, Arkansas A M & N College.
- **An Interdisciplinary Approach to the Teaching of English and Political Science to Disadvantaged Students.** Saralou R. Gifford, Philander Smith College.
National Student Leadership Conference for Predominantly Black Educational Institutions. Charles Mason, student, Knoxville College

Neighborhood Environmental Improvement Campaign, James W. Russell, Tuskegee Institute, and Peggy L. Allen, Jackson State College

Life and Physical Science Co-Op Pre-Proposal, Eddie C. Smith, Coahoma Junior College

Summer Workshop in Environmental Education and Curriculum, E. C. Fonsworth, Bishop College

Student Project in Environmental Education, E. C. Fonsworth, Bishop College

Workshop for Teachers in Traditionally Black Institutions, Ernest Berry, Cheyney State College

In-Service Seminar for Faculty and Staff of Junior and/or Community Colleges, Desiree E. Jett, Essex County College

The Role of the Black College in Developing Consumer Awareness, Sylvia Plutchok, Clark College

Scientific Communications Center, Brady Harden, Kenneth Jones, Charles Mason, and Brenda Wiggins, Knoxville College students

Teacher Development for Desegregating Schools, Joseph E. Taylor, Bethune-Cookman College

Inter/transdisciplinary Approach to the Humanities, McKinley Newton, Philander Smith College

Professor in Residence (at ORAU to represent black institutions), Paul E. Parker, North Carolina A & T State University

Rehabilitation Work Experience for Students Enrolled at Traditionally Black Institutions, Paul E. Parker, North Carolina A & T State University

Consortium for Dietetic Services, a cooperative venture in which students would spend one year at Selma University and a second year at Tuskegee Institute, Johnnie Prothro and (Mrs.) Rowena Cleveland, Tuskegee Institute and Selma University

Ralph W. Tyler, director emeritus of the Center for Advanced Study in the Behavioral Sciences at Stanford University and founding secretary of the National Academy of Education, was among workshop speakers.
Daily sessions included formal lecture and panel presentations by Oak Ridge and visiting representatives, followed by meetings of small work groups to develop projects and proposals.

Human Resources Development, Margaret W. Knighton of Southern University and Joseph W. Letson, Central State University
Cooperative Research Involving Demographic Survey of TNI Communities, Walter W. Gibson, LeMoyne-Owen College
TNI Clearing House, Lester B. Johnson, Savannah State College
Research Course in History/Interim, Charles Mason, student, Knoxville College
Co 
Involvement Course, Charles Mason, student, Coxville College
Black Contemporary Philosophy Course/Interim, Charles Mason, student, Knoxville College

Effect of Demography on Black Psychology and Sociology, Paul E. Parker, North Carolina A & T State University
The Impact of Ecology on the Economically and Socially Deprived Community, Ernest Berry, Cheyney State College
Making College Education Relevant: Answering the Needs of the '70's, Elaine Ferguson, Essex County College
An Interdisciplinary Approach to the Teaching of Health Science Technology, Little K. Singleton, T. A. Lawson State Junior College
Oak Ridge Institute for Black GI's Not Already Learning (O.R.I.G.I.N.A.L.), Roscoe S. Brown, Grambling College
Institute for Counselor Rehabilitation, Freddie L. Gromes, Florida A & M University
Extending the Dimensions of Developing Manpower Resource Potential for Employment in Area of Nuclear Energy Applications to Peaceful Uses, Willis L. Brown, Langston University
Training for Developing Black Leadership, Garrett F. Weaver, West Virginia State College

Post Workshops Activities and Participant Evaluation
A precise evaluation of the impact created by the workshop is a challenging task and, possibly, an unattainable goal. One of the evaluative devices used was to reconvene the participants in small groups at different campuses. Three such "mini-conferences" were held: October 28 and 29, 1970, in Birmingham, Alabama, at T. A. Lawson State Junior College; November 19 and 20, 1970, in Greensboro, North Carolina, at North Carolina A & T State University; and January 28 and 29, 1971, in Memphis, Tennessee, at LeMoyne-Owen College. These conferences gave an excellent insight into
the participants' reactions to their experiences in Oak Ridge and provided a variety of new ideas and suggestions for additional activities. There were an average of 20 participants at each of the three conferences, which became forums for discussion of institutional, post-Oak Ridge activities and for development of inter-institutional teams of faculty and administrative staff to initiate new activities.

One result was the establishment of a newsletter to satisfy the need for interinstitutional communication of new ideas and occurrences. The first issue of a "TNI News Bulletin" was sent out by ORAU to all workshop participants in January 1971 and was well received by its audience.

At the conclusion of the series of three follow up conferences, a small representative group of the participants was invited to meet as a task force to discuss plans for and to advise ORAU on the directions of its future relationships with black institutions. This group (LINC) comprises the following members: George Ferguson, Howard University, Chairman; Calvin O. Atchison, Tennessee State University; Z. W. Dybczak, Tuskegee Institute; Sister M. Eucharista, Xavier University of New Orleans; W. W. Grigorieff, ORAU; Freddie L. Grooms, Florida A & M University; Joe Hargrove, Arkansas A M & N College; Hardy Liston, Jr., University of Tennessee; James U. Lowe, Meharry Medical College; William H. McArthur, Knoxville College; Paul E. Parker, North Carolina A & T State University; Lillie K. Singleton, T. A. Lawson State Junior College; and Herman B. Smith, Association of State Universities and Land-Grant Colleges.

The new committee has met on two occasions and has

Faculty participants Joyce O'Rourke, Stillman College, Tuscaloosa, Alabama, and Hattie L. Perkins, Grambling College, Grambling, Louisiana, with Dr. Grigorieff; William H. McArthur, chairman of the Division of Natural Sciences and Mathematics at Knoxville College, who was workshop coordinator; Elliot S. Pierce, director of the AEC Division of Nuclear Education and Training; and Knoxville College student body president Charles Mason, one of four undergraduate participants in the 1970 workshops.

The new committee has met on two occasions and has
Attendance at the 1970 workshops during June and July totaled 129 faculty members and administrators from 67 black colleges.

delineated the following purposes for its continuing program of work:

1. To make itself known to TNI's. governmental agencies, foundations, and other educational organizations.

2. To keep informed of ongoing and projected programs of ORNL-ORAU, and other governmental agencies and foundations:
   a. Express to ORNL, OPAU and others the consciences and aspirations of the black educational community and to evaluate programs (proposals) as they relate to TNI's.
   b. Urge, through existing organizations, such as the Office for the Advancement of Public Negro Colleges, Institute for Services to Education, College Service Bureau, Federal Interagency Committee on Education, and others, a deeper interest and involvement on the part of TNI's in ORNL-ORAU, and other governmental and foundation programs.

The composition of the group will, in general, remain as it now exists although there may be changes both in the designation of individual members and in the chairmanship. Various resource persons will be invited to meet with the group as such needs become apparent.

One further result from the 1970 workshops has been three visits under the Research Associates program to the Oak Ridge National Laboratory by faculty of black institutions and one appointment under the Faculty Research Participation program of ORAU.
In keeping with the national interest in promoting and improving education in all sectors, Oak Ridge Associated Universities conducted a four-week workshop, August 4–29, 1969, to acquaint faculties of six traditionally Negro institutions having engineering curricula with opportunities for their development through participation in programs of the AEC, its contractors, and other government agencies.

Fourteen faculty members of institutions offering engineering degrees and three from science departments of liberal arts institutions participated, for varying periods, in the workshop. Five attended the entire session.

The six institutions represented were: Howard University, Washington, D.C.; North Carolina A & T State University, Greensboro; Prairie View A & M College, Prairie View, Texas; Southern University, Baton Rouge, Louisiana; Tennessee State University, Nashville; and Tuskegee Institute, Tuskegee, Alabama.

Contributing to the program as speakers and discussants in both formal sessions and informal workshops were more than 70 persons representing Oak Ridge Associated Universities; the Atomic Energy Commission and its Oak Ridge, Chicago, and Savannah River Operations; the Nuclear Division, Union Carbide Corporation; E. I. duPont de Nemours & Company; Argonne, Brookhaven, and Oak Ridge National Laboratories; Lawrence Radiation Laboratory; the National Science Foundation; U.S. Department of Health, Education, and Welfare; National Aeronautics and Space Administration; Federal Interagency Committee on Education; and the University of Tennessee.

The workshop sessions were largely unstructured to allow dialogue and opportunities for exploring sources of...
Fig. 2 Development Proposal Resulting from 1969 Oak Ridge Workshop

Proposal to strengthen
ENGINEERING EDUCATION
AT TRADITIONALLY NEGRO INSTITUTIONS

Howard University
Washington, D.C.

North Carolina A & T State University
Greensboro, North Carolina

Prairie View A & M College
Prairie View, Texas

Southern University
Baton Rouge, Louisiana

Tennessee State University
Nashville, Tennessee

Tuskegee Institute
Tuskegee, Alabama
support and possibilities for expansion of institutional development.

The general projects developed by the workshop have to date brought assistance totaling $310,000 to the participating institutions. In addition, projects proposed by individual faculty members have been supported by grants of $253,444, for a total of $563,444 resulting from the 1969 activities.

A number of the positive results of the workshop are described in the paragraphs that follow on specific new activities stimulated by this first Oak Ridge program for Negro institutions.

Pre Co-op Program

The 1969 workshop participants unanimously agreed that fresh and innovative approaches must be taken to increase the enrollment in scientific and engineering disciplines at predominantly black institutions. At the mid-point of the four-week workshop, they came up with the idea of a pre-co-op scheme that would provide a high school graduate work experience during the summer prior to entering the university and, subsequently, financial assistance during the freshman year of a regular co-op program.

It was enlightening and exciting to witness and to participate in the development of this new program. On Thursday of the second week, the group had been invited to visit the Savannah River Laboratory, operated by the Du Pont Company for the AEC. A general presentation of the Laboratory's activities and conducted visits to selected points of interest were followed by a general discussion session. Isaac Porche of Southern University raised the question whether there were mechanisms or activities at Savannah River Laboratory or other AEC laboratories to make it possible for Negro high school seniors to participate in a summer program preceding their freshman year at an engineering school as a cooperative student. The answer was that this type of arrangement was not available but it certainly was not impossible to conceive.

The following day, back in Oak Ridge, participants pursued the idea further and identified some of the necessary ingredients to make the program meaningful: 1) stipends during the pre-freshman summer, 2) financial assistance for books and fees in the freshman year, and 3) partial financial support of the faculty member coordinating this activity on the campus. At this point, ORAU staff contacted Charles Kuykendall, director of the Central Employment Office of Union Carbide's Nuclear Division, to inquire about the feasibility of such an undertaking. A joint conference was rapidly arranged, which resulted in agreement in principle by Union Carbide that the proposal was in line with their general thinking and that there was no specific reason why it could not be funded.

By the third week of the workshop, a formal proposal had been prepared by the six institutions and submitted to Union Carbide. On the day before the participants left Oak Ridge, Roger F. Hibbs, president of Nuclear Division, met with the group and assured them that, barring unforeseen circumstances, the project would be funded and would start in the summer of 1970. The yearly cost of this activity was estimated at $61,000, not including payments to the students. The total cost of the three-year program was estimated at $600,000. The result was a splendid example of satisfying a demonstrated need with a significant new activity.

Five black schools (Howard University, North Carolina A & T State University, Southern University, Tennessee State University, and Tuskegee Institute) recruited 29 high-
school graduates for the program, 19 of whom spent the summer of 1970 in Oak Ridge; the remaining 10 were younger than 18 and had to find different summer activities. By the end of the 1970–71 fall semester, 28 of these students were participating in the regular co-op programs of the five participating institutions.

A further interesting result is the establishment of a similar program by the Du Pont Company at the Savannah River Laboratory, involving three entering freshmen each from two institutions: North Carolina A & T and Tuskegee. All six students spent the summer of 1970 at Savannah River and became enrolled at their respective colleges in the fall.

After results of the three-year pilot study are evaluated, it is envisaged that the program may be extended to other schools and industries. In the meantime, the 34 black students represent a significant addition to the available manpower pool of black scientists and engineers, very few of whom would have been able to go to college without the assistance of this program.

Developmental Proposal for Engineering Education

The six traditionally Negro schools of engineering, from which 70 percent or more of the nation’s Negro engineers have been graduated, undertook, at the suggestion of President A. I. Thomas of Prairie View A & M College, a self study and developed with staff assistance from ORAU a long-range program to strengthen existing programs of engineering education. Following an organizing meeting at Prairie View in March 1969, a series of work sessions were arranged with the deans of engineering of the six schools by Hardy Liston, Jr., professor and chairman of the Department of Mechanical Engineering at North Carolina A & T State, who was then serving as professor-in-residence at ORAU.

A broad four-year program was formulated to develop faculties, curricula, physical plants, library resources, student recruitment and counseling, administration, supporting services, research, and long range planning. Meetings were arranged by Marion Bowden, assistant for equal employment opportunity programs, Office of the General Manager, AEC Headquarters, with the presidents of the six institutions, representatives of the U.S. Atomic Energy Commission, Roger F. Hibbs of Union Carbide, and, finally, with high ranking executives of 16 major companies in June 1970 in New York City to present the formal proposal, which requested $18,152,320 in development assistance for the six institutions over a period of four years.

Although the large total requested has not been subscribed to by the industrial concerns, a grant of $270,000 for a three-year span has been made by the Du Pont Company. Another grant of $30,000 for one year by Westinghouse and several others are being processed. ORAU has offered to assist the six institutions in broadening the base of possible support and will be working with a large number of industrial concerns to secure additional funding.

Professor-in-Residence

At the start of ORAU’s activities with black institutions, it was realized that a more complete knowledge of educational problems confronting the blacks and a valid line of communication between the Negro and the white educational thinking were necessary. One solution was to create at ORAU the position of “Professor-in-Residence,” to be staffed for periods of a semester or so by a faculty member of a black
Planning for 1969 workshop began in January 1969 at a meeting in Oak Ridge for deans of engineering and faculty representatives of traditionally Negro institutions and their counterparts in neighboring, predominantly white institutions. The group met under ORAU auspices with representatives of the Atomic Energy Commission, Oak Ridge National Laboratory, and the Nuclear Division, Union Carbide Corporation, which operates the major Oak Ridge nuclear production and research facilities for the AEC.
The first ORAU workshop in August 1969 involved 17 faculty members from the six black institutions that offer baccalaureate-level programs in engineering. Represented were: Howard University, Washington, D. C.; North Carolina A & T State University, Greensboro; Prairie View A & M College, Prairie View, Texas; Southern University, Baton Rouge, Louisiana; Tennessee State University, Nashville; and Tuskegee Institute, Tuskegee, Alabama.

The second ORAU Professor in Residence, for the period of February 2 to August 31, 1970, was Professor A. V. Jett, on leave of absence from his position as manager of the Computer Center at Tuskegee Institute and enroute to Purdue University to assume an NSF faculty improvement appointment. He very ably and successfully helped ORAU to produce the 1970 workshops, and to evaluate and summarize this activity.

A modified scheme was arranged for the 1970-71 post-
workshop period; Professor William H. McArthur, chairman of the Division of Natural Sciences and Mathematics at Knoxville College, who spent about a quarter of his time at ORAU during the 1970–71 academic year, was primarily responsible for the conduct of the first three mini-conferences and for the main thrust of ORAU's assistance in the development of proposals by workshop participants.

Resident Representatives
One direct consequence of the 1969 workshop was the establishment of "ORAU Resident Representatives" on the campuses of black institutions. This program offered travel contracts to participants in the workshop, providing them travel expenses for a limited number of trips connected with projects initiated in Oak Ridge.

Research Associates
A program of "Research Associates" was initiated in the summer of 1969. It provides an opportunity to faculty members to establish meaningful contacts with scientists and engineers of the Oak Ridge area in the expectation that such periodic contacts either in Oak Ridge or back on their own campuses would result in research activities mutually beneficial to both parties involved. In the academic year 1969–70, three such arrangements were started.
PROGRAMS AND PROJECTS DEVELOPED BY THE 1969 WORKSHOP PARTICIPANTS

Cooperative Activities

Pre-Co-op Program to increase student enrollment in science and engineering through work experiences

Prospectus for three 1970 Oak Ridge workshops

Mobile laboratory for 4- to 5-week teaching program at Negro institutions

Resident Representatives, a two-way reciprocating channel between black faculty and ORAU

Research Associates, a program of interaction between black faculty and Oak Ridge scientists and engineers

$15 million proposal for financial assistance from industry

Individual Projects

Howard University

Physical Chemical Studies of the Interactions Between Metal Ions and Biologically Important Molecules, Peter Hambright, principal investigator.

Thermoluminescence and Infrared Absorption of Radiation Damage in Optically Transparent Materials, A. N. Thorpe, principal investigator.

Status

28 students involved in 1970

Four workshops conducted with 129 participants

Awarded 10,000 by AEC; visits to Prairie View, Southern University and Tennessee State scheduled in '71

Initiated

Three visits to Oak Ridge by black faculty in 1970

Dupont awarded $270,000; Westinghouse awarded $30,000

Total

$310,000

Awarded $28,000, AEC

Awarded $20,000, AEC

North Carolina A & T State University

A Study of Sandwich Cylinders with Various Moduli, Paul E. Parker, principal investigator

A Proposal to Study the Effect of Surface Treatment on Rate of Reaction of Gases with Uranium, B. M. Botros, principal investigator.

Southern University

Development of Slide-Tape Lectures, Civil Engineering in the Nuclear Age, Ray E. Ingram, principal investigator.

Distorted Wave Calculations and Angular Correlation Studies, K. H. Liu, M. A. Toosi, Zorawar Singh, and Edgar Link.

Chelation of Transition Metals by Derivatives of 3-Nitroso-2-Pyridinol and 5-nitroso-4-Pyrimidol, Curtis M. McDonald, principal investigator.

Tennessee State University


Tuskegee Institute

Traineeships Program in Nuclear Engineering, Z. W. Dybczak, principal investigator.

Depository Library at Tuskegee Institute, a book collection to be given to the Institute by AEC

Status

Awarded $25,000, AEC

Awarded $12,000, Union Carbide Nuclear Division

Awarded $25,000, Union Carbide Nuclear Division

Awarded $6,168, AEC

Awarded $51,431, AEC

Awarded $22,000, AEC

Awarded $39,845, AEC

Awarded $24,000, AEC

Established in January 1971

Total $253,444

$563,444
The preceding sections of this report describe the concept, operation, and principal results of the workshops conducted in Oak Ridge during the summers of 1969 and 1970 for faculty and administrators of traditionally Negro institutions of higher learning.

The most important and tangible impact of these activities is, without doubt, the substantial funding already awarded to the participating black institutions, both by governmental and private sources, for new projects and programs of their own design.

The sum of these contract and grant commitments both for cooperative activities among institutions and for individual projects stimulated by the 1969 workshop is now $563,444. For 1970, with many proposals from participants still under review by federal agencies and other funding sources, the total is $547,200—again representing both individual project support and funding for cooperative activities.

Thus, over the two-year period beginning in 1969, new programs totaling more than $1.1 million have been initiated at black institutions as a result of participation by their faculties and administrators in the Oak Ridge workshops. This sum, while modest in relation to the urgent, overall financial needs of these schools, is nonetheless indicative of the effectiveness and promise of the workshop-type activity in helping these institutions 1) to realize their own potentials more fully and 2) to bring to fruition many promising new avenues for further strengthening and development of their academic programs.

ORAU obviously has benefited in many ways from its participation with traditionally Negro institutions in these workshops and development activities. It is not as easy, however, to define the specific contributions ORAU has been...
Participants in pilot cooperative education program that grew out of 1959 workshop met with Roger F. Hibbs, president of Union Carbide's Nuclear Division, for briefing on the program. They are, from left: HarJy Liston, Jr., then chairman of the Department of Mechanical Engineering at North Carolina A & T State University; Isaac R. Porche, Jr., professor in the Department of Electrical Engineering, Southern University; Mr. Hibbs; George A. Ferguson, director of cooperative education, Howard University; Andrew Minor, director of cooperative education, Tennessee State University; and George Howard III, director of cooperative education, Tuskegee Institute.
First two ORAU professors in residence from black institutions were Hardy Liston, Jr., left, then chairman of the Department of Mechanical Engineering at North Carolina A & T, who served a seven-month appointment in 1969, and Arthur Victor Jett, Jr., manager of the Computer Center at Tuskegee Institute, whose assignment covered a similar period in 1970.

able to make, through the same activities, to the further strengthening of black institutions of higher learning. Perhaps, this most logically would include assistance in the identification of strengths and needs of these institutions, especially for the 1969 group, or a helping hand in the development of new interdisciplinary activities and projects, or knowledge of educational interests of various governmental, industrial, and private organizations and working experience with their key personnel.

Most probably, however, the main contribution has been simply to bring together, in some cases for the first time, white and black educators to discuss, design, and develop new activities.

Future relationships with the black institutions might involve a variety of activities. A principal contribution would be to help initiate new activities in cooperation with and on behalf of other individual institutions or cooperating groups of institutions. It seems to be extremely important that ORAU should continually strive to divest itself of operating responsibility for projects that could and should be conducted directly by the institutions themselves.

Conceivably, services to be rendered might involve consultative and advisory assistance; assistance in the initiation, promotion, operation, and follow through of pilot projects; joint cooperative projects with black schools and other minority institutions; subcontractual arrangements from black institutions to ORAU for conducting certain parts of a program; continuation and broadening to other disciplines of the "professorship in residence" at ORAU; establishment of a conference series at black campuses, similar in concept to the Gordon Research Conferences of the American Association for the Advancement of Science, to facilitate communications among institutions; and other services such as the "TNl News Bulletin," designed to strengthen communications both between and among institutions on problems of common interest and with governmental and private sources of support for academic development.

The establishment of the new advisory committee, LINC, under the chairmanship of Professor George Ferguson of Howard University, provides a mechanism for continuing renewal and extension of this partnership between ORAU and the black academic community. For its part, ORAU welcomes and pledges its continuing assistance to what has been, and promises to continue, a mutually rewarding and strengthening relationship through these cooperative activities.
appendix a

1970 WORKSHOP SCHEDULES, SPEAKERS,
AND PARTICIPATING
FACULTY AND ADMINISTRATORS
# First Faculty Session

**JUNE 8–JULY 3, 1970 • OAK RIDGE, TENNESSEE**

<table>
<thead>
<tr>
<th>Monday, June 8</th>
<th>Tuesday, June 9</th>
<th>Wednesday, June 10</th>
<th>Thursday, June 11</th>
<th>Friday, June 12</th>
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<tbody>
<tr>
<td><strong>9:00 a.m.</strong></td>
<td>Welcomes and Introduction</td>
<td><strong>9:00 a.m.</strong></td>
<td><strong>9:00 a.m.</strong></td>
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<tr>
<td></td>
<td>H. M. Roth</td>
<td>SUMMARY AND EVALUATION OF 1969 WORKSHOPS</td>
<td>LANGUAGE ARTS III</td>
<td>NATIONAL ENVIRONMENTAL POLICY</td>
</tr>
<tr>
<td><strong>10:30 a.m.</strong></td>
<td>PROJECTIONS</td>
<td>E. Pierce</td>
<td>2:00 p.m.</td>
<td>1:00 p.m.</td>
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<td>W. C. Pollard</td>
<td>THE POLITICS OF CHANGE</td>
<td>Tour to ORNL, TVA, Other</td>
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<tr>
<td><strong>2:00 p.m.</strong></td>
<td>THE POLITICS OF CHANGE</td>
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<td></td>
<td>Elias Blake, Jr.</td>
<td>DTIE</td>
<td>PLANNING FOR DEVELOPMENT OF SCIENTIFIC STUDIES IN COLLEGES</td>
<td>THE POPULATION PROBLEM</td>
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<td><strong>5:00 p.m.</strong></td>
<td>Mixer, Courtesy of ORAU</td>
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<td>R. M. Kniseley</td>
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<td>LANGUAGE ARTS I</td>
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<tr>
<th>Monday, June 15</th>
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<th>Thursday, June 18</th>
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<tr>
<td>9:30 a.m.</td>
<td>URBAN DEVELOPMENT</td>
<td>9:00 a.m.</td>
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<tr>
<td>James Jordan</td>
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<td>TRAINING AND TECHNOLOGY</td>
<td>ENVIRONMENTAL QUALITY AND PUBLIC POLICY</td>
<td>Workshop II</td>
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<tr>
<td>2:00 p.m.</td>
<td>Workshop I</td>
<td>2:00 p.m.</td>
<td>Interactive Seminar by Oak Ridge National Laboratory Panel</td>
<td>CLINIC ON PROPOSALS A</td>
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<tr>
<td>M. Bowden</td>
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<td>TECHNOLOGY AND SOCIETY</td>
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<td>Paul Carnell</td>
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<td>H. M. Roth</td>
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<td>W. W. Grigorieff</td>
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<td>G. Courteny</td>
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**NOTES:** The dates below indicate the planned program for week of June 15.
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<tr>
<th>Day</th>
<th>Monday, June 22</th>
<th>Tuesday, June 23</th>
<th>Wednesday, June 24</th>
<th>Thursday, June 25</th>
<th>Friday, June 26</th>
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<tr>
<td>9:00 a.m.</td>
<td>Workshop VI</td>
<td>THE ROLE OF TECHNOLOGY AND ORGANIZATION IN HIGHER EDUCATION</td>
<td>Tour: Depart Teacher Training Building for Daniel Arthur Rehabilitation Center</td>
<td>USAEC RESEARCH</td>
<td>Workshop IX</td>
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<tr>
<td>3:00-5:00 p.m.</td>
<td>READING</td>
<td>Orlando Taylor</td>
<td>1:00 p.m. Tours: Depart Teacher Training Building for Biology Division, Y-12</td>
<td>2:00 p.m. Forum</td>
<td>2:00 p.m. THE UNIVERSITY'S RESPONSE</td>
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<td>3:00 p.m. Depart Biology Division, Y-12, for Regional Science Experience Center</td>
<td>BLACK INSTITUTIONS AND THE SOCIAL ORDER</td>
<td>Arthur G. Hansen</td>
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<tr>
<td>Optional: EPDA COMPONENT—OAK RIDGE WORKSHOPS</td>
<td>Tuesday, June 23 / 10:30 a.m.—12:30 p.m. / READING / Orlando Taylor</td>
<td>Wednesday, June 24 / 1:00-3:00 p.m. / READING / Orlando Taylor</td>
<td>3:15 p.m.</td>
<td>Workshop XII</td>
<td>INTERACTION BETWEEN THE TWO-YEAR AND FOUR-YEAR COLLEGES Andrew Goodrich</td>
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<tr>
<td>Monday, June 29</td>
<td>Task Group Meetings to Formulate Ideas, Conclusions, Plans, for Implementation</td>
<td>9:00 a.m. Task Group Meetings to Formulate Ideas, Conclusions, Plans, for Implementation</td>
<td>9:00 a.m. Task Group Meetings to Formulate Ideas, Conclusions, Plans, for Implementation, Proposed Solutions</td>
<td>9:00 a.m. Workshop XII</td>
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<td>3:15 p.m.</td>
<td>Workshop X</td>
<td>DEMOGRAPHY</td>
<td>3:15 p.m. INSTITUTIONAL OUTREACH</td>
<td>1:00 p.m. Task Group Reports—Ideas, Conclusions, Proposed Solutions, Plans for Implementation</td>
<td>1:00 p.m.</td>
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<td>STUDENT PROJECTS</td>
<td>Everett Lee</td>
<td>Andrew Goodrich</td>
<td>3:00 p.m. Evaluation</td>
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<td>Participants</td>
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<td>3:15 p.m. Workshop XI FACULTY RESEARCH Participating</td>
<td>3:00 p.m. Evaluation</td>
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<td>Optional: EPDA COMPONENT—OAK RIDGE WORKSHOPS</td>
<td>Tuesday, June 30</td>
<td>Wednesday, July 1</td>
<td>Thursday, July 2</td>
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<td>9:00 a.m.</td>
<td>ORIENTATION</td>
<td>9:00 a.m. ENVIRONMENT</td>
<td>9:00 a.m. TRAINING AND TECHNOLOGY</td>
<td>9:00 a.m. DEMOGRAPHY</td>
<td>9:00 a.m. POLITICS OF CHANGE</td>
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<tr>
<td>10:30 a.m.</td>
<td>USAEC PROGRAMS</td>
<td>1:15 p.m. LANGUAGE ARTS I</td>
<td>1:15 p.m. LANGUAGE ARTS II</td>
<td>1:15 p.m. LANGUAGE ARTS III</td>
<td>1:15 p.m. Tour I-Oak Ridge Facilities</td>
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<td>S. R. Sapirie</td>
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<td>Charline Conyers</td>
<td>6:00 p.m. PICNIC (Dutch)</td>
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<td>1:15 p.m.</td>
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<td>3:30 p.m. Workshop II</td>
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<td>Monday, July 13</td>
<td>Educational Assistance</td>
<td>Monday, July 14</td>
<td>Educational Assistance</td>
<td>Monday, July 15</td>
<td>Educational Assistance</td>
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<td>9:00 a.m.</td>
<td>EDUCATIONAL ASSISTANCE</td>
<td>9:00 a.m. MODEL CITIES</td>
<td>9:00 a.m. RESOURCES</td>
<td>9:00 a.m. SAFETY</td>
<td>9:00 a.m. NATIONAL ENVIRONMENTAL POLICY</td>
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<td>G. C. Kyker</td>
<td>Johnny Ford</td>
<td>W. G. Pollard</td>
<td>J. A. Lenhard</td>
<td>D. J. Rose</td>
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<td>Workshop IV</td>
<td>1:15 p.m. Workshop V</td>
<td>1:15 p.m. Workshop VI</td>
<td>1:15 p.m. Tour II</td>
<td>1:15 p.m. TECHNOLOGY AND SOCIETY</td>
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<td>TWO-YEAR COLLEGES</td>
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<td>CLINIC ON PROPOSALS</td>
<td>ENVIRONMENTAL QUALITY SEMINAR</td>
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<td>Andrew Goodrich</td>
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<td>Paul Carnell</td>
<td>George Joseph</td>
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<td>PROJECTIONS</td>
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<td>1:15 p.m.</td>
<td>THE BLACK COLLEGE</td>
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<td>E. Bacon</td>
<td></td>
<td>READING III</td>
<td>1970--SOME INEVITABLE INSTITUTIONAL IMPERATIVES</td>
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<td>R. W. Tyler</td>
<td></td>
<td>Ronald Williams</td>
<td>Herman Smith</td>
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<td><strong>1:15 p.m.</strong></td>
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<td>3:30 p.m.</td>
<td>VIEW FROM WASHING-</td>
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<tr>
<td>READING I</td>
<td></td>
<td>Workshop IX</td>
<td>STON, D. C.</td>
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<tr>
<td>Ronald Williams</td>
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<td>A. M. Weinberg</td>
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<td><strong>3:30 p.m.</strong></td>
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<td>Workshop VII</td>
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<td>Workshop VII</td>
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<td><strong>5:30 p.m.</strong></td>
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<td>RECEPTION</td>
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<th>Monday, July 27</th>
<th>Tuesday, July 28</th>
<th>Wednesday, July 29</th>
<th>Thursday, July 30</th>
<th>Friday, July 31</th>
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<td><strong>9:00 a.m.</strong></td>
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<td>POPULATION POLICIES</td>
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<td>EXCHANGE PROFESSORSHIPS</td>
<td>EVALUATION AND PLANNING</td>
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<tr>
<td>J. H. Gibbons</td>
<td></td>
<td>Hilton Smith</td>
<td>W. H. McArthur</td>
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<td><strong>1:15 p.m.</strong></td>
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<td>1:15 p.m.</td>
<td>W. W. Grigoriiff</td>
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<tr>
<td>MATHEMATICS I</td>
<td></td>
<td>MATHEMATICS II</td>
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<tr>
<td>Edward Carroll</td>
<td></td>
<td>Mathematical</td>
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<td><strong>3:30 p.m.</strong></td>
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<tr>
<td>A. M. Weinberg</td>
<td></td>
<td>Workshop X</td>
<td>SCIENCE POLICY</td>
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<tr>
<td></td>
<td></td>
<td>Staff</td>
<td>A. M. Weinberg</td>
<td></td>
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<td><strong>8:00 p.m.</strong></td>
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<td>RECEPTION</td>
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</tr>
</tbody>
</table>

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appendix b

1969 WORKSHOP SCHEDULE, CONTRIBUTORS, AND PARTICIPANTS
## SCHEDULE • AUGUST 4-29, 1969 • OAK RIDGE, TENNESSEE

### Monday, August 4
- 9:00 a.m. WELCOME
  - ORAU - W. G. Pollard
  - ORO - H. M. Roth
  - USAEC - M. A. Bowden
  - UNC - R. F. Hibbs

### Tuesday, August 5
- 9:00 a.m. ORAU ENGINEERING AT
  - W. G. Pollard
- 9:45 a.m. DNET PROGRAMS
  - E. S. Pierce
- 10:45 a.m. F. I. C. E.
  - B. G. Nimmo
- 11:40 a.m. THE PLAN OF THE WORKSHOP
  - W. W. Grigorieff
  - F. Kertesz
- 2:00-4:30 p.m. ENGINEERING AT ORNL
  - S. E. Beall

### Wednesday, August 6
- 9:00 a.m. ORAU ENGINEERING AT
  - H. M. Roth
  - M. A. Bowden
  - R. F. Hibbs
- 9:00 a.m. TECHNICAL INFORMATION
  - M. Levenson
- 2:00-4:30 p.m. INFORMATION CENTERS
  - F. Kretzsch

### Thursday, August 7
- 9:00 a.m. CHEMISTRY
  - J. L. Fowler
  - T. A. Welton
- 10:30 a.m. Lab Visit
- 2:00-4:30 p.m. Workshop II
- 2:00-4:30 p.m. Workshop III

### Friday, August 8
- 9:00 a.m. BIOLOGY
  - H. I. Adler
- 4:48 p.m. DEPART FOR AUGUSTA, GA.
- 7:30 p.m. DINNER WITH SRL/SRO OFFICIALS
- 9:00 a.m.-4:30 p.m. Workshop V

### August 11
- 9:00 a.m.-12 noon ENGINEERING AND PRODUCTION
  - P. R. Vanstrum
  - W. W. Grigorieff
  - W. J. Yaggi
- 2:00-4:30 p.m. ECOLOGY
  - J. S. Olson
  - J. W. Curlin

### August 12
- 9:00 a.m. BIOENGINEERING
  - J. L. Liverman
- 2:00-4:30 p.m. Workshop IV
- 7:00 p.m. DINNER (Dutch)
  - E. Bacon, Executive Director, F. I. C. E.
  - M. Donahue
  - D. Carlisle

### August 13
- 9:00 a.m. VISIT TO SAVANNAH RIVER LABORATORY
- 4:48 p.m. DEPART FOR AUGUSTA, GA.
- 7:30 p.m. DINNER WITH SRL/SRO OFFICIALS
- 9:00 a.m.-4:30 p.m. Workshop V

### August 15
- 9:00 a.m.-4:30 p.m. Workshop V
- 7:30 p.m. DINNER WITH SRL/SRO OFFICIALS
- RETURN TO OAK RIDGE
<table>
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<tr>
<th>Monday, August 18</th>
<th>Tuesday, August 19</th>
<th>Wednesday, August 20</th>
<th>Thursday, August 21</th>
<th>Friday, August 22</th>
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<tr>
<td><strong>AEC PROGRAMS (Long Range)</strong></td>
<td><strong>9:00 a.m.–12 noon</strong></td>
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<tr>
<td><strong>DIVISION OF REACTOR DEVELOPMENT AND TECHNOLOGY (Engrs.)</strong></td>
<td><strong>DIVISION OF BIOLOGY AND MEDICINE</strong></td>
<td><strong>HIGHLIGHTS OF NEW APPROACHES TO ENGINEERING EDUCATION</strong></td>
<td><strong>NSF PROGRAMS</strong></td>
<td><strong>FELLOWSHIPS</strong></td>
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<td><strong>2:00–4:30 p.m.</strong></td>
<td><strong>DIVISION OF RESEARCH</strong></td>
<td><strong>10:00 a.m.</strong></td>
<td><strong>HEW PROGRAMS</strong></td>
<td><strong>10:00 a.m.</strong></td>
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<td>D. R. Miller</td>
<td>W. E. Hughes</td>
<td>P. Valien</td>
<td>P. Valien</td>
<td>L. A. Rayburn</td>
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<td><strong>H. J. Potter</strong></td>
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<td><strong>2:00–4:30 p.m.</strong></td>
<td><strong>DIVISION OF ISOTOPES DEVELOPMENT</strong></td>
<td><strong>11:00 a.m.</strong></td>
<td><strong>NASA PROGRAMS</strong></td>
<td><strong>11:00 a.m.</strong></td>
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<td>R. L. Butenhoff</td>
<td>F. Hansing</td>
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<td>F. Hansing</td>
<td>EDUCATION AT OAK RIDGE NATIONAL LABORATORY</td>
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<td>P. S. Baker</td>
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<td>2:00–4:30 p.m.</td>
<td>L. Nelson</td>
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<td><strong>Workshop VI</strong></td>
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<td><strong>Workshop VI</strong></td>
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<td><strong>Monday, August 25</strong></td>
<td><strong>Tuesday, August 26</strong></td>
<td><strong>Wednesday, August 27</strong></td>
<td><strong>Thursday, August 28</strong></td>
<td><strong>Friday, August 29</strong></td>
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<td><strong>9:00 a.m.</strong></td>
<td><strong>University Participation</strong></td>
<td><strong>9:00–10:30 a.m.</strong></td>
<td><strong>SUB-GROUP WORK SESSIONS</strong></td>
<td><strong>9:00 a.m.–12:00 noon</strong></td>
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<td><strong>AEC ASSISTANCE</strong></td>
<td><strong>AT ARGONNE NATIONAL LABORATORY</strong></td>
<td><strong>at Brookhaven National Laboratory</strong></td>
<td><strong>RECAPITULATION—PLANS FOR FOLLOW-UP</strong></td>
<td><strong>M. Bowden</strong></td>
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<tr>
<td>H. M. Rour</td>
<td>M. D. Peterson</td>
<td>H. C. Anderson</td>
<td></td>
<td>G. Courtney</td>
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<tr>
<td><strong>10:00 a.m.</strong></td>
<td><strong>L. W. Dini</strong></td>
<td><strong>6:00 p.m.</strong></td>
<td>E. S. Pierce</td>
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<tr>
<td><strong>ENVIRONMENTAL MUTAGENS—SYMPOSIA</strong></td>
<td><strong>J. A. Wagner</strong></td>
<td><strong>PICNIC (Dutch)</strong></td>
<td>H. M. Roth</td>
<td>G. Courney</td>
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<td>A. Hulvander</td>
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<td>W. G. Pollard</td>
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<td><strong>11:00 a.m.</strong></td>
<td><strong>10:30 a.m.–12:00 noon</strong></td>
<td><strong>W. W. Grigorieff</strong></td>
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<td>W. W. Grigorieff</td>
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<tr>
<td><strong>TRAINING AND TECHNOLOGY</strong></td>
<td><strong>A. BROOKHAVEN NATIONAL LABORATORY</strong></td>
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<tr>
<td>W. H. Russell</td>
<td>H. C. Anderson</td>
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<td><strong>2:00–4:30 p.m.</strong></td>
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<td><strong>6:00 p.m.</strong></td>
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<td><strong>Workshop VII</strong></td>
<td><strong>Workshop VIII</strong></td>
<td><strong>PICNIC (Dutch)</strong></td>
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</tbody>
</table>
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