

UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH

Minutes of the Board of Trustees  
April 11, 1961  
Seattle, Washington

The fifth meeting of the Board of Trustees of the University Corporation for Atmospheric Research was called to order by Chairman Houghton on Tuesday April 11, 1961, at 9:15 a.m. (P.S.T.) in the Husky Union Building on the campus of the University of Washington, at Seattle, Washington.

Present were the following members of the Board of Trustees: W.A. Baum, G. S. Benton, R. A. Bryson, J. C. Calhoun, P. E. Church, C. F. Floe, W. B. Harrell, J. W. Hastie, R. R. Heinrich, S. L. Hess, Judge W. S. Jackson, A. R. Kassander, G. L. Lee, D. F. Leipper, T. F. Malone, J. L. McCarthy, M. Neiburger, H. Neuberger, D. L. Patrick, A. W. Peterson, G. A. Pettitt, J. A. Spar, H. R. Warfield, and H. K. Work. Also present, officers of the Corporation, H. G. Houghton, Chairman, U. O. Roberts, Director, H. R. Byers, Vice Chairman, M. A. Farrell, Secretary-Treasurer and R. J. Low, Assistant Secretary-Assistant Treasurer. By invitation Mary Andrews, T. C. Fry, and Colorado legal counsel, John L. J. Hart, Esq.

Absent: L. V. Berkner, Rev. R. J. Henle, E. W. Hewson, B. Nichols, E. F. Osborn, and legal counsel, R. W. Wilkinson, Jr. Esq.

Chairman Houghton called the meeting to order and introduced Dr. P.E. Church, Chairman of the Department of Meteorology and Climatology at the University of Washington, who welcomed the group on behalf of the University.

Dr. Houghton introduced new Board members, George A. Pettitt of the University of California, H. Ridgeley Warfield of Johns Hopkins University, and Judge W. S. Jackson. He also introduced Thornton C. Fry, Consultant to the Director of UCAR.

The minutes of the meeting of October 11, 1960, were approved as distributed.

1. REPORT OF THE NOMINATING COMMITTEE

In the absence of the Chairman of the Committee, E. W. Hewson, Reid Bryson made the report, stating the Committee wished to place the following names before the Trustees:

A. Trustees-at-large:

- 1) T. F. Malone to succeed himself, for the period April 1961-April 1964.
- 2) J. Churchill Owen to fill vacancy left by H. Stommel, for the period April 1961-April 1963.
- 3) Detlev W. Bronk, for the period April 1961-April 1964.

Chairman Houghton called for nominations from the floor. There were none. It was regularly moved and seconded that the nominations be closed. Motion carried.

It was regularly moved and seconded that the secretary cast a unanimous ballot for the election of these three Trustees-at-large. Motion carried.

B. Members of the Executive Committee:

- 1) Gilbert L. Lee to replace Stewart Macaulay.
- 2) T. F. Malone to succeed himself.
- 3) M. Neiburger to replace E. Wendell Hewson.

All of the above to be for the period April 1961-April 1964.

There were no nominations from the floor. It was regularly moved and seconded that the nominations be closed and that the secretary cast a unanimous ballot electing these three men to the Executive Committee. Motion carried.

C. Secretary-Treasurer:

- 1) M. A. Farrell to succeed himself for the period April 1961-April 1962.

Chairman Houghton called for nominations from the floor. There were none.

It was regularly moved and seconded that the nominations be closed. Motion carried.

It was regularly moved and seconded that M. A. Farrell be re-elected Secretary-Treasurer. Motion carried.

Chairman Houghton said that anticipating the election of Detlev Bronk and J. Churchill Owen he had invited them to meet with us today, but both were unable to do so because of prior commitments.

2. ELECTION OF A NEW NOMINATING COMMITTEE.

The chairman pointed out the need in considering members to be selected for the Nominating Committee to keep in mind their eligibility for office and that this was particularly important at this time as the offices of chairman and vice chairman will need to be filled next year. With these thoughts in mind, the chairman said he had considered the matter and in order to assist the group he would suggest the following people:

1. Reid Bryson
2. Father Henle
3. Tom Malone

It was regularly moved and seconded that the Nominating Committee for the following year be Reid Bryson, Chairman, Father Henle, and Tom Malcne. Motion carried.

### 3. REPORT OF THE CHAIRMAN

#### A. Status of Dr. P. D. Thompson

Chairman Houghton stated the problem of Dr. Thompson is essentially solved in that as a result of his request the Air Force has assigned him to NCAR at Boulder, Colorado, until his retirement in 1962. Thus we will have a 'de facto' associate director on the Air Force payroll. Yesterday the Executive Committee at the suggestion of NSF acted to authorize a salary for Dr. Thompson. The figure was set at \$20,000 per annum, in accordance with the Bryson Committee salary structure report, effective upon his retirement from the Air Force.

#### B. Table Mountain Site

The chairman indicated all the necessary actions in connection with the Table Mountain Site have progressed very well. The City of Boulder has voted to supply water to the site. The Colorado State Legislature has voted funds in the amount of \$250,000 to obtain the site and turn it over to NSF with the reverter clause previously discussed. The Governor has signed the bill, and it is anticipated the acquisition may be completed about July 1, 1961.

#### C. Personnel for NCAR

This is a brief report and Director Roberts can supply more details if desired. As a result of recommendations of the Director to the Executive Committee, approval has been given to appoint several prospective scientists to the staff of NCAR. They include Mr. Vincent E. Lally, Dr. Peter Meyer, Dr. A. C. Wiin-Nielsen, and Dr. Andrew Skumanich. Offers previously authorized and made have been accepted by Dr. J. P. Lodge and Dr. Patrick Squires. Negotiations are continuing with Dr. Daniel F. Rex. This appointment may be considered a joint appointment in scientific work and administration in that, while Dan will have a major responsibility in administration, he also wants to participate in the research program of the Center. It should be recalled that the Board approves positions carrying salaries of \$12,000 and above and the Director positions with stipends under \$12,000. (See item 4 - C and D in the Executive Committee Minutes of April 10, 1961 for additional information.)

#### D. Joint appointments of NCAR Personnel and Exchanges

The matter of joint appointments and the exchange of staff between universities and NCAR was discussed in yesterday's Executive Committee meeting. The opportunity for university personnel, including graduate students, to spend some time at the Center has been recognized since the first meeting of UCAR. Anticipating that it may be desirable to establish certain policies to facilitate these arrangements, the Executive Committee yesterday authorized the Chairman to appoint a committee to explore these matters.

This new committee will also propose policies under which NCAR staff may participate in university programs.

4. REPORT OF THE TREASURER

M. A. Farrell circulated an audited copy of the treasurer's statement for the period April 26, 1960, to March 10, 1961, which is reproduced below.

It was regularly moved and seconded that the treasurer's report be accepted. Motion carried.

COPY

HASKINS and SELLS

Certified Public Accountants

Land Title Building  
Philadelphia 10

ACCOUNTANTS' OPINION

University Corporation for Atmospheric Research:

We have examined the statement of membership and management allowance fund combined cash receipts and disbursements, and unexpended balances of cash and securities of the University Corporation for Atmospheric Research for the period from April 26, 1960 to March 10, 1961. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying statement presents fairly the membership and management allowance fund combined cash receipts and disbursements and balances of cash and securities for the period from April 26, 1960 to March 10, 1961.

March 27, 1961

"signed: Haskins & Sells"



UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH  
(A Membership Corporation)

STATEMENT OF MEMBERSHIP AND MANAGEMENT ALLOWANCE FUND  
COMBINED CASH RECEIPTS AND DISBURSEMENTS, AND  
UNEXPENDED BALANCE OF CASH AND SECURITIES  
FOR THE PERIOD FROM APRIL 26, 1960 TO MARCH 10, 1961

MEMBERSHIP FUND BALANCE, APRIL 26, 1960 .....	\$24,655.04
RECEIPTS:	
Membership fee - University of Washington ... \$ 2,500.00	
Income from U. S. Treasury Bills (redemption less acquisition cost) .....	639.54
Management allowance fee from National Science Foundation (for 10 months) .....	<u>41,666.70</u>
	<u>44,806.24</u>
Total .....	69,461.28
DISBURSEMENTS:	
Securities purchased:	
\$45,000 91 day U. S. Treasury Bills - due May 11, 1961 .....	44,739.85
Expenses:	
Traveling .....	\$13,696.71
Engineering services .....	1,918.85
Directors' discretionary fund .	2,500.00
Legal .....	900.00
Telephone and telegrams .....	348.76
Meeting expense .....	480.68
Auditing .....	248.36
Air travel credit card deposit.	425.00
Miscellaneous .....	<u>444.07</u>
	<u>20,962.43</u>
Total .....	<u>65,702.28</u>
UNEXPENDED CASH BALANCE, MARCH 10, 1961 .....	3,759.00
SECURITIES HELD (At cost) .....	<u>44,739.85</u>
COMBINED FUND BALANCE, MARCH 10, 1961 .....	<u>\$48,498.85</u>

NOTE - The above funds are those administered by the Treasurer and are on deposit with, or held by, the Mellon National Bank and Trust Company, Pittsburgh, Pa. Certain additional funds are in the custody of the Assistant Treasurer, located in Boulder, Colorado, and are not included in this statement of the Treasurer's cash receipts and disbursements.

## 5. REPORT OF COUNSEL

Chairman Houghton said that two items are included under this report: 1) mechanics of merging UCAR and HAO and 2) granting authority to the officers of the corporation to conduct corporation business.

The Chairman stated that he had requested Colorado Counsel to explore the matter of merging HAO and UCAR. He has done this, and at yesterday's Executive Committee Meeting had recommended a procedure to be followed. This will not permit definitive action at this time but indicates the steps to be taken.

Mr. Hart commented that he perhaps should provide more of the historical background of the development of HAO than he had yesterday. Originally HAO was entirely an operation of Harvard University. Later Harvard felt the University of Colorado should play a role, and a non-profit corporation was formed. At the time the corporation was formed there were six trustees, three trustees nominated by the President of Harvard and three by the president of the University of Colorado. These six people were the members as well as the trustees of HAO. Later the Board was expanded to eight in number, with the addition of the Provost of Harvard and the President of the University of Colorado. When President Conant retired and Dr. Pusey took over at Harvard, he indicated that the University of Colorado was doing a fine job, that Boulder was a long way from Boston, and that Harvard wished to withdraw. The articles and by-laws were, accordingly, modified to reflect this change. The modification provided, among other things, that vacancies in the Board shall be filled by the Board, acting upon nominations submitted by the President of the University of Colorado with the approval of the Regents. The Harvard-appointed Trustees offered to resign; but they were asked to stay on and all agreed to do so. HAO has a very fine staff, many assets and many contracts, which have built up valuable property at Climax and at Boulder.

Colorado Counsel stated he had discussed the plan with Roy Wilkinson by phone, and it has his approval. Mr. Hart then read a letter from Roy Wilkinson, Jr. endorsing this course of action. This is as follows:

### For HAO

The Trustees of HAO will be asked to amend its Certificate of Incorporation to include all the objectives and purposes of UCAR. Next, it would set the number of Trustees, the method of their appointment, their present composition, and the periods of office so that they are identical with UCAR. Then the name of HAO would be changed to University Corporation for Atmospheric Research (a Colorado corporation). The new UCAR could have by-laws and Articles identical with those of the present UCAR, but there will be an opportunity to make any changes that may seem desirable.

### For UCAR

All assets of UCAR, a Delaware corporation would be transferred to the succeeding non-profit Colorado corporation. This would require a meeting of the "members" of UCAR of Delaware, to vote the dissolution of the Delaware Corporation and the transfer of all assets and functions to UCAR of

Colorado (present HAO) in accordance with the Certificate of Incorporation of UCAR, Article Eighth (f). The NSF contract would be transferred in its present form, although this would require approval of NSF.

#### University of Colorado

This recommendation proposes that the University of Colorado give up its right to act jointly with the Trustees of HAO in filling vacancies on the HAO Board. To amend the HAO Articles requires a two-thirds vote, and this cannot be achieved without the support of some of the Trustees who were nominated by the President of the University of Colorado. The University may wish to become the 15th member of UCAR or have some representation on the Board of the proposed new corporation. This is not a legal requirement but a matter of courtesy.

The new UCAR may wish to consider the advantages and disadvantages of redefining members. AUI and HAO have no institutional members, rather the Trustees are the members. Should UCAR change and not have the universities themselves as members? One advantage is that the universities might not be subject to possible liabilities.

A discussion of the proposed merger procedure followed. It was suggested that the dissolution of the present UCAR and the transfer of assets and objectives to the new Colorado UCAR might require the approval of the present member institutions and perhaps of their governing boards. It appeared that the objectives of UCAR are broad enough to encompass the present programs of HAO. It was pointed out that, although HAO was established primarily for astronomical and astrophysical research, its scientific reviewers have recently questioned whether it might not be devoting too much attention at present to the terrestrial atmosphere.

It was recognized that the UCAR Board undertook a moral commitment to seek a merger with HAO at the time it appointed Dr. Roberts as Director. There are clear legal advantages to having UCAR incorporated in Colorado, our base of operations, rather than in Delaware, and this was recommended some time ago by Counsel Wilkinson. There is a natural reluctance to dissolve the present Corporation, but it was generally recognized that this procedure was suggested because of its relative simplicity. The charter of UCAR contains specific provisions for the transfer of assets to a corporation of similar objectives while the charter of the HAO does not contain any such provision. HAO has received gifts from many sources, and it is not clear that their Board has the right to transfer these to another corporation. The property of HAO at Climax was given with a reverter clause, and there is some possibility that this property might be lost if HAO were dissolved. HAO also has many contracts and grants from a variety of agencies each of which would have to approve the transfer to UCAR. By contrast, UCAR's situation is extremely simple involving only the NSF contract and the corporate funds.

It was recognized that no decision could be taken until more information was obtained on the attitudes of the HAO Board and of President Newton and the University of Colorado. Any proposed action must also have the prior approval of NSF. Before action can be taken it will be necessary to

present complete documentation of the proposal including the proposed Articles and by-laws of the new corporation. It was recalled that, at the April 25, 1960, meeting of the Executive Committee, the Chairman was authorized to appoint a special committee to meet with W. O. Roberts and representatives of HAO to work out the details of the continuing relationship of HAO to UCAR in a manner satisfactory to UCAR, HAO, W. O. Roberts, and NSF. The Chairman had not appointed such a committee pending clarification of many of the factors involved. It now appears that the implementation of this action of the Executive Committee is in order to prepare the way for a future decision on the merger by the Boards of UCAR and HAO.

It was regularly moved and seconded that the matter be tabled and that the Chairman appoint a special committee as authorized on page 4 of the Executive Committee Minutes of April 25, 1960, to wit - (Be it further resolved that the chairman appoint a special committee to meet with W. O. Roberts and representatives of HAO to work out the details of the continuing relationship of HAO to UCAR in a manner satisfactory to UCAR, HAO, W. O. Roberts, and NSF.)  
Motion carried.

The Chairman stated that the second legal item to be considered was discussed at yesterday's Executive Committee meeting and tabled until today. In order to operate our enterprise it is essential for someone in Boulder to be authorized to sign contracts, etc. Counsel points out no authorization now exists and, in day-to-day business, people need to be protected, and they need some authorization to do what they were hired to do. The Resolution presented yesterday was believed to be too broad in the powers it conferred. Mr. Hart has prepared a substitute resolution. He said the problem was a little unusual in that we have no president, vice president, or weekly meetings of the Executive Committee. Problems dealing with the site, temporary quarters, etc. require action. The resolution now reads:

Resolved, that Walter Orr Roberts, Director of the corporation, be and he is hereby authorized and empowered to execute on behalf of and in the name of the corporation any contract, lease, report, application or other instrument in connection with the preparation of the site of NCAR or the operation of NCAR, with power to delegate all or part of this authority from time to time to any other officer or officers duly elected or appointed in accordance with the by-laws, for such period, under such circumstances, and on such terms as he deems fit, except where said Director's power to execute any instrument or class of instrument shall be hereafter expressly withdrawn by resolution of the Board of Trustees or the Executive Committee; and provided that said Director and other officers shall retain all authority to execute instruments which they would have had in the absence of this resolution; and provided further that this resolution shall not authorize any financial commitment on behalf of the corporation unless said director determines that funds are available, or can be expected to be available, under the corporation's contract or contracts with NSF or some other source he deems dependable.

In the discussion of this resolution it was brought out that it apparently delegated power to the Director to make unlimited financial commitments on behalf of the Corporation. It was felt by some that member institutions might be liable for financial commitments in excess of the resources of the corporation. It was clearly stated that this was viewed solely as a matter of principle and represented no lack of confidence in the wisdom or prudence of the Director. It was pointed out that all contracts, leases, and major purchases would require the approval of NSF and that this together with NSF approval of the budget provided adequate safeguards. However, it was felt that UCAR had an independent responsibility to impose reasonable safeguards. It was generally agreed that the problem could be resolved by imposing a dollar limit on the commitment power delegated to the Director by the resolution.

A. W. Peterson moved to amend the resolution by eliminating everything after "retain all authority to execute instruments which they would have had in the absence of this resolution;" and add -"and provided further that there be a ceiling of \$50,000.00 per item, in accordance with approved budgets or financial plans." The amended resolution reads as follows:

Resolved, that Walter Orr Roberts, Director of the Corporation, be and he is hereby authorized and empowered to execute on behalf of and in the name of the corporation any contract, lease, report, application or other instrument in connection with the preparation of the site of NCAR or the operation of NCAR, with power to delegate all or part of this authority from time to time to any other officer or officers duly elected or appointed in accordance with the by-laws, for such period, under such circumstances, and on such terms as he deems fit, except where said Director's power to execute any instrument or class of instrument shall be hereafter expressly withdrawn by resolution of the Board of Trustees or the Executive Committee; and provided that said Director and other officers shall retain all authority to execute instruments which they would have had in the absence of this resolution; and provided further that there be a ceiling of \$50,000.00 per item, in accordance with approved budgets or financial plans.

It was regularly moved and seconded that the amendment be approved. Motion carried.

It was regularly moved and seconded that the motion as amended be approved. Motion carried.

#### 6. STATUS REPORT OF THE PLANNING COMMITTEE

W. B. Harrell, Chairman, said the other members of the Committee were A. R. Kassander and J. C. Calhoun. He indicated that Chairman Houghton had suggested that the Deans of the Schools of Architecture or Chairmen of the Departments of Architecture of our member institutions be invited to serve as an ad hoc committee to provide advice on the selection of an architect. This has been done, and representatives of Arizona, Cornell, M.I.T., Michigan, Penn State, Texas A&M, and Washington have agreed to serve. A meeting is scheduled for May 21 to deliberate and receive the advice and counsel of these architects. The Director's staff has prepared an excellent docu-

ment outlining certain objectives. Director Roberts said that this was essentially an effort to set down goals or ideals eventually to be achieved in NCAR's buildings. Chairman Houghton asked if there were any questions. This is a way of leading to the selection of the architect that will stand up as a proper and prudent procedure. The question was asked - are deans of architecture receiving information prior to May 21 meeting? Chairman Harrell replied - yes, it is planned to furnish them with all available information. Henry Houghton indicated that it is anticipated an architect will be selected by the Executive Committee prior to the October meeting, and Board members will be kept informed.

#### 7. REPORT OF THE DIRECTOR AND THE BUSINESS MANAGER

Director Roberts said he wished to report briefly on the tasks that have occupied much of his time since the October Board meeting and the direction in which we will be moving. a) It is gratifying to see how our efforts are taking shape. b) We have three main goals before us.

1) To create a Research Center for a staff of scientists to pursue broad areas of research. Dr. Thompson and I expect to have made six to ten appointments by September and six to ten more next year. The goal is 50-50 between meteorology and adjacent disciplines. The securing of scientists and aiding them to establish a program of research is the most important task of the Director and the Associate Director. It is hoped that the visiting staff will be drawn both from member and non-member institutions and that there will also be a 50-50 ratio between visitors and residents in order to assure that our facilities become fully exploited in the total national interest.

2) For NCAR to serve as a planning Center for people or institutions who see the necessity for meetings to delineate our needs (i.e., major facilities for use of all groups, or funds for institutional research). Under the sponsorship of NCAR, impartial auspices can be provided for planning conferences for such matters.

3) A primary function is to provide facilities where national needs require them and a single institution cannot effectively or economically supply them.

We are making progress in all three of the above areas and have made recommendations for a number of appointments listed earlier by the Chairman. c) Research areas may be characterized as follows:

1) Dynamical aspects including energetics of large scale circulation; dynamics of stratosphere and lower levels. This area will be the principle interest of Drs. Thompson and Wiin-Nielsen.

2) Physics and chemistry of clouds, precipitation and atmospheric particulates at all levels. This will be the research area to be developed by Drs. Junge, Lodge, Squires and possibly, Skumanich.

3) Interaction between the atmosphere and the surface of the earth. No progress in this area to date.



4) Interactions between the terrestrial atmosphere and astrophysical phenomena - meteoric dusts and etc., area of Dr. Meyer and a large part of the HAO Staff.

d) Establishment of planning conferences. We have held conferences regarding the development of a national balloon flight facility. The purpose is to provide for balloons carrying 1000 to 1500 pounds that would ascend to 80,000 feet or higher both for atmospheric experiments and other types of scientific work. It was pointed out at this conference that serious difficulties have plagued scientists who wish to fly heavy packages, with resulting failure of the experiments, loss of equipment, and danger to personnel. In general it has not been possible to plan an experiment with confidence of success. A suggestion growing out of this meeting was that NCAR could perform an important service in making available to the scientific community as a whole an opportunity to have an effective balloon facility. A plan has been devised whereby NCAR can provide this and other types of facilities to meet clear national needs. It is planned in this instance to set up an advisory ad hoc balloon users panel and a technical group (balloon engineering group) in NCAR, consisting of Mr. Lally and five to six engineers under him. Balloon programs could be brought to the research (users) panel for consideration, and they would establish their propriety and priority and determine which ones should be brought to the National Center. Where the answers are yes, the Center will attempt to provide flights for the experiments. There might be a few or a dozen flights a year. It was proposed that NCAR, rather than itself operating a balloon flight facility, at least at the start, would make available such a facility and serve through a watchdog committee to provide for its efficient and effective operation. In addition, NCAR would assist in arranging through DOD or other sources of financial aid the necessary financing of balloons, launch capabilities, and other support to the group that is making the flight. (See discussion and schematic suggestion for the organization of a national balloon facility on pages 18-19 of January 23, 1961, Executive Committee minutes.) The Director's recommendation of Mr. Lally and the description of his area of responsibility brought out the following questions and comments:

1) Is it your plan for NCAR to arrange for balloons and physical facilities? Yes, if DOD provides balloons and expenses for the launch, it would be NCAR's responsibility to find funds (provide justification for use of DOD funds). Operations could be done, for example, by the Vernalis (AF) balloon group under such an arrangement.

2) Let's take a hypothetical example, such as Dr. Suomi at Wisconsin. If he had a plan which the panel thought was desirable, NCAR would undertake to secure funds to launch the necessary balloons. Suomi would need to have his own funds for analysis of data and for development of the package to be flown - as in the present satellite research area.

3) Are these balloons that carry a package of instruments, and the balloons are lost? Yes, although in some few cases, balloons and instruments are both lost, the data being transmitted back by radio.

4) In our contract we have budgeted \$100,000 of FY '61 funds for

balloon subcontract activity. We may use part or all of this, as our first activity, in support of the experiments in launch methods being developed by Dr. Schwarzschild of Princeton.

5) For purposes of clarity let me say that Director Roberts is not proposing to use a major share of our funds under the NSF contract to purchase balloons for widespread efforts. The trouble is that a scientist who wants to do an experiment in a balloon has been unable to get balloons and equipment flown without becoming a balloon expert himself. NSF Contract funds will support four to six men in the balloon engineering group under Mr. Lally, and these, together with the users panel, will make it possible for UCAR to provide balloon flight capabilities to scientists who want to use them.

6) In a sense here, we would be using flight capabilities of other institutions, under NCAR auspices, and would be seeing to it that top quality facilities are made available to scientists. Related in a way is the role NCAR can play in working out recommendations to FAA for air safety without damaging balloon research programs - a pressing problem at this moment.

e) Dr. Fry and I are continuing to see if we can support UCAR Fellowships other than through the use of NSF Funds.

f) 1963 Budget Proposal.

1) Director Roberts asked Bob Low to present several items. Bob said our initial budget request in the amount of 6.5 million dollars (see item 6, page 14, in minutes of Executive Committee meeting of January 23, 1961) was a trial balloon to NSF to get their reaction. The climate around the NSF program office seemed favorable to a 9 million dollar figure, and a budget in this amount (copies of which were distributed at the meeting) follow:

Initial Budget Submission to NSF for  
Fiscal Year 1963

Total	<u>\$9,000,000</u>
<u>Major Categories</u>	
Operation and Maintenance	\$3,700,000
Equipment	2,800,000
Construction	<u>2,500,000</u>
Total	<u>\$9,000,000</u>



Operation and Maintenance Breakdown

National Facilities Programs	\$1,800,000
Theoretical and Experimental Program	1,500,000
Administration	350,000
Management Allowance	<u>50,000</u>
Total	<u>\$3,700,000</u>

National Facilities Programs

Balloon Flight Program	\$1,500,000
Aircraft Operation and High Altitude Flight Program	200,000
Rocket Sounding Planning Program	<u>100,000</u>
Total	<u>\$1,800,000</u>

Theoretical and Experimental Program

Organized into the following program areas (no dollar breakdown given in budget breakdown):

1. Dynamical Aspects;
2. Thermodynamical, physical, and chemical aspects;
3. Interaction between the atmosphere and the underlying ground or ocean surface;
4. Interaction between terrestrial atmosphere and astrophysical phenomena;
5. Data reduction and analysis.

Administration

Includes activities (again, no specific breakdowns given) of the director's office, business office, library, plus site and construction planning.

Equipment

Equipment for small electronics and machine shops and chemical laboratories for the atmospheric particulates, atmospheric chemistry, cloud physics, and program area #3 activities	\$ 300,000
IBM 7090 computer and auxiliary equipment	<u>2,500,000</u>
Total	<u>\$2,800,000</u>

Construction

First increment of construction, on Table Mountain (to provide 65,000 to 130,000 sq. ft. of space, depending on unit construction cost - expected to fall between \$15 and \$30 per sq. ft.)	\$2,000,000
Balloon launch facilities	<u>500,000</u>
Total	<u>\$2,500,000</u>

Bob Low said these are the initial talking documents (18 months ahead of the start of FY '63). We will for the first time go through the entire budget process. The Chairman asked, do you need approval? This is so tentative perhaps this doesn't need approval. This item was then discussed as follows:

- 1) This has already gone to NSF? Yes.
- 2) How does the balloon flight program tie into the 2.5 million for construction? One-half million is set aside for construction of balloon flight test facilities. Indefiniteness indicated; we cannot estimate such things accurately at this stage of our planning. We may try to get the Air Force to insert in their '63 budget request a sum for balloon flight facility. Dr. Droessler will probably make a similar trial request to NSF to put funds into their budget for universities to use for this purpose.
- 3) One of the very great needs is to specify and define a bold and imaginative program which NSF can use to go to Congress for funds to implement national goals and which will allow such funds to be requested at an appropriate level.
- 4) Wonder whether an IBM 7090 is a sufficiently bold request? Problems today are being trimmed down with 7090 machines everywhere, and we need to think of even bigger and faster machines. Perhaps we should look ahead to greater needs, or we are not doing the proper job for meteorology.
- 5) Problem hadn't been exposed. Remington Rand's Lark is faster, has greater memory and etc. Also costs about 10 million. Whether we are going to need that type of machine will be determined as NCAR research gets better outlined. Not certain we will want a 7090, but this is a preliminary thought about the appropriate level of such activity in FY '63.
- 6) It's a calculated guess regarding computer facility. We may need a CDC 1604 or to defer the purchase in case an IBM Stretch is needed. In that case a new time table could be set and new budget requirements developed.
- 7) If we set a figure of 8 million in place of 2 million, would it be kicked out? Yes, at this time, very probably.

8) We may have enough flexibility in that the sum requested to purchase a 7090 can be used to rent a Stretch.

9) Comparative capacities are much greater than comparative prices. One can obtain an increase of capacity of the order of 20 to 1 for a cost increase like 4 to 1. We need to establish what we want to do.

10) This is one of the intangibles of our first-phase deliberations with NSF. If it is necessary to adjust our request to meet our needs and if \$10 million is required for a computer, we would tackle the problem along this line.

11) Can we step up our program from a 2.5 million dollar budget for '62 to a 9 million dollar budget in '63? (The increase in the operating segment of the budget is \$1.1 to \$3.7 million.) Several considerations apply. Figures approved by the institutions involved in the budget process (NSF, Bureau of the Budget, and Congress) will not be the same as those on this piece of paper. FY '63 is to be a major construction period; the budget includes, in addition to the \$3.7 million for operations, \$2.5 million for construction and \$2.8 million for equipment (mainly the computer).

12) How was the figure for operations and maintenance determined? Here are my figures for you to look at.

13) Will the management figure be continued? Is the \$50,000 amount adequate? Yes, it is not planned to ask for more this year.

14) How many unsolicited requests for appointments to the National Center have you received? Hundreds - indicating an enormous expression of interest by the scientific community at large. The majority, of course, are not worthy of serious consideration.

15) Do you wish to take any action regarding this budget or merely receive it as an information item?

16) What is the date it must be submitted? Approximately May 15. Will the document be submitted under Director Roberts' signature in accordance with authorization given this morning? Yes.

17) We can't act intelligently on the above two pieces of paper. Not enough detail, nor sufficient time to study. I know we are working against time and that action is necessary. The detail given here is all that was submitted to NSF. This will be expanded in later submissions on this budget. Our own working figures are scarcely more detailed. Can't very well be at this stage. This phase of the budget process handled at an informed level; AUI in the past has sometimes done it by telephone.

18) A discussion followed concerning the role of the Trustees with respect to the budget process. It was pointed out that, through budget formulation, the Board can assist in guiding the program development of the Center. The opinion expressed by certain Trustees that a larger computer than the 7090 may be needed was cited as an example.

19) Need budget material as far in advance of the Trustees meetings as possible.

20) Assuming optimistically the money will be obtained, could we hold funds for 7090 and add to it by later allocation and get bigger machine? Probably, with NSF approval.

21) We can place a letter order and three months before delivery request a larger machine. This has often been done.

22) Practical problem. We need to get estimate into NSF for '63. Agree with comment under (17) above for more details. Lets go ahead with this budget in accordance with Director's suggestion but give consideration to bringing in additional details next time.

23) Two opposite opinions have been expressed:

1) budget too conservative and 2) it is more than can be spent.

It was regularly moved and seconded that this report be received. Motion carried.

g) The total request submitted in '61 budget for NSF was increased substantially in the Kennedy Budget. However, the only reduction in the budget was the apparent cut in the NCAR budget in the amount of \$300,000. We may get this restored, but we may prefer to operate within this limit until the following fiscal year rather than bring pressure for a restoration.

h) Outline of Provisional Personnel Policies - Robert Low distributed copies of an Outline of Provisional Personnel Policies. He stated no action was requested. He said we started with the excellent Bryson report but have departed in some respects. I want to point out where we have departed. The problem has received considerable attention.

1) Holidays - one day less than Bryson Report.

2) Sick leave - considerably less (item 5 gives leeway).

3) Travel - philosophy comes largely from Dr. Fry. It's a straight cost philosophy.

4) Moving allowance - Bryson amount considered maximum; individual cases to be negotiated separately.

5) Health Insurance - HAO has a good program (probably not available in today's insurance market), and UCAR name can probably be substituted for HAO. (Counsel's suggested merger plan solves this problem.)

6) Life Insurance - \$10,000 term coverage for all permanent, full time staff members. (different from Bryson Report).

7) Annuity - Do not want to adopt HAO program for Center.

Comments from Board members included the following:

- a) This is important business, and I recommend that a committee be appointed to consider these proposals.
- b) It bothers me that, on advice and enthusiasm of salesmen, UCAR is using an HAO policy. Claims might not be met. Have correspondence in files from the Company.
- c) We should avoid affiliating with other organizations as we grow.

It was regularly moved and seconded that the Chairman appoint a small committee to consult with Robert Low and explore this matter and report their recommendation to the Executive Committee. Motion carried.

- i) The Financial Plan approved by the Executive Committee on January 23 was accepted by NSF with only minor changes, i.e. there will be thirteen rather than twelve management allowance payments; and an amount budgeted for an accounting machine was disallowed and has been re-allocated to the operating budget. A summary sheet giving the major categories of the approved Financial Plan is shown on the page following.
- j) Income tax status of UCAR. Roy Wilkinson, Esq. reported that the government requested additional information, which has been supplied.
- k) Robert Low announced the appointment of an accountant named J. A. McGlone. He was a chemistry major and studied accounting at St. Louis University. He has been with Dow Chemical as an accountant for many years and has knowledge of AEC operations as well as some experience in the management of government financed construction.
- l) Patent Agreement. Mr. Low said Mr. Hart has prepared a draft of a patent agreement, and it has been submitted to NSF for review. It is more complicated than agreements for other organizations, because we need to allow for the possibility that NCAR may have contracts with government agencies other than NSF. It may also have private funds. (Both will occur if the merger with HAO is carried out.)

It is proposed that in the case of royalties from inventions, perhaps 50% should go to the inventor. This item raised the following questions and comments:

- 1) Isn't this rather generous? This is net, not gross income, and 50% of net income usually equals something like 15% of the gross income.
- 2) We have all had many battles with the government regarding patents.
- 3) Is it planned that UCAR or NCAR will hold patents in its own name? Do you plan to grant rights to inventor if corporation doesn't want them? Yes, to both questions.
- 4) Is there a written agreement between HAO and personnel regarding patents? Yes. Between NCAR and personnel? Not yet, no scientific work yet.

Exhibit A

FINANCIAL PLAN  
EXPENDITURE SCHEDULE  
FISCAL YEAR 1961

Description	Prior Allocation	Expended or Committed FY 1961 thru 31 Dec. 1960	Requested Allocation FY 1961	Approved Total Allocation	Estimated Commitments FY 1961
1. Construction, Improvement and Major Repair of Facilities					
Engineering design studies and site planning	None	None	\$ 95,000	\$ 95,000	\$ 95,000
2. Auxiliary Operating, Technical, and Scientific Equipment					
Auxiliary Operating Equipment	None	\$ 1,070	25,000	25,000	25,000
Office Furniture and Equipment	None	9,670	35,000	28,000	28,000
3. Operation and Maintenance	<u>None</u>	<u>76,100</u>	<u>345,000</u>	<u>352,000</u>	<u>352,000</u>
TOTAL ALL FUNDS	None	<u>\$86,840</u>	<u>\$500,000</u>	<u>\$500,000</u>	<u>\$500,000</u>

5) The Board should formally adopt a patent policy. However, we don't want to do this until we have NSF approval. Board cannot take action at this time, but will later on and will need to review it in advance.

m) Appointment of auditor to audit NCAR finances. The Assistant Secretary-Treasurer suggested that the same firm do the Center accounts as does UCAR accounts.

It was regularly moved and seconded that the Assistant Secretary-Assistant Treasurer be authorized to employ Haskins and Sells to audit NCAR accounts. Motion carried.

n) Accident Insurance for Trustees et al. Bob Low stated, in accordance with instructions of January 23, 1961, Executive Committee meeting, that he had obtained bids from two companies. One of these, Travelers Insurance Company, was considerably lower in their bid - \$880 vs. \$543 (plus an additional small amount for coverage for permanent total disability, not included in Travelers' proposal).

Proposed policy will provide coverage for "accidental bodily injuries" for Trustees, unpaid officers, and legal counsel of UCAR while traveling on official business on behalf of UCAR. All methods of travel are covered except travel in certain aircraft of non-scheduled airlines and except in aircraft owned by UCAR. Coverage is, however, valid in "Powered civil aircraft" (operated by non-scheduled airlines) "having a valid and current 'standard airworthiness certificate' issued by the duly constituted governmental authority having jurisdiction over civil aviation in the country of its registry and piloted by a person who then holds a valid and current Certificate of Competency of a rating authorizing him to pilot such aircraft, provided such aircraft (a) is then used for transportation of passengers only and not for any purpose such as testing, experimenting, or any other purpose except the sole purpose of transportation of passengers, and (b) is not a rotorcraft, jet-propelled aircraft, or rocket-propelled aircraft, and (c) is not engaged in flying which requires a special permit or waiver from an authority having jurisdiction over civil aviation, even though granted, unless previously consented to in writing by the Company." Travel by MATS is considered travel by a scheduled airline and is covered.

The following benefits are provided:

I. Death, dismemberment, and loss of sight - principal sum...\$100,000.00

For loss of:

Life .....	principal sum
Both hands or both feet or sight of both eyes..	principal sum
One hand and one foot.....	principal sum
Either hand or foot and sight of one eye.....	principal sum
Either hand or foot.....	1/2 principal sum
Sight of one eye.....	1/2 principal sum



II. Weekly indemnity for total disability:

Weekly indemnity rate (for so long as the disability lasts but not more than 52 weeks): The applicable weekly indemnity rate is 80% of the average basic weekly salary earned by the insured person during the three months immediately preceding the date of accident, but not more than \$150.00 per week.

III. Blanket Medical Expense: Limit..... \$10,000.00

IV. Permanent total disability:

Provided total disability occurs prior to the Insured's 64th birthday, the company will pay each week for a period of two, but not more than, 500 weeks an amount equal to 1/500 of the principal sum (i.e. \$200.00, which, if continued for 500 weeks, gives the principal sum of \$100,000.00).

- 1) What about staff? Not covered under this policy.
- 2) What about Colorado Industrial Insurance? Doesn't pay a principal sum, only hospital expenses.

It was regularly moved and seconded that Robert Low be authorized to take out accident insurance with Travelers Insurance Company as outlined above, to cover all Board members, unpaid officers, and legal counsel. Motion carried.

8. INVITATION TO DR. DROESSLER TO ATTEND UCAR MEETINGS.

Chairman Houghton said he would like to ask the Board's advice. He said we might wish to invite the NSF Program Director for the Atmospheric Sciences (Earl Droessler) to attend our meetings. He would have been helpful today. We could go into Executive session when necessary. What is the feeling of Board members?

In the discussion it was pointed out that such a procedure could put Dr. Droessler in an awkward position since he cannot speak with authority for NSF. It was also noted that UCAR has broader objectives than those covered by the NSF contract and that we do not wish to be considered simply as the manager of this one contract. Many felt that the idea had some merit and that it should be explored further. It was the consensus that the Chairman discuss this matter informally with Dr. Droessler and, if it appeared mutually desirable, Dr. Droessler be invited to attend a single meeting of either the Executive Committee or the Board as an experiment and with no further commitment.

9. THANKS TO UNIVERSITY OF WASHINGTON.

The Board went on record as expressing sincere appreciation to Phil Church, Dean McCarthy, President Odegaard, and others and to the



University of Washington for the excellent arrangements for the meetings and for their very gracious hospitality.

10. TIME AND PLACE OF NEXT REGULAR MEETING

The Chairman indicated the next meeting of the Board is scheduled for October 10, 1961, and that by that time we will have significant staff and a home in Boulder, and it is important that the Board of Trustees have contact with activities of the National Center. The Chairman stated it was his opinion that beginning next October we should have our Board Meetings in Boulder, Colorado.

It was regularly moved and seconded that the October 10, 1961, meeting be held in Boulder, Colorado. Motion carried.

11. FUTURE BOARD MEETINGS.

Recognizing how busy the Director and his staff are in these early days of staffing, planning for construction, and etc., the suggestion was made that as things "shake down" it would be desirable if the Board members could be supplied with more documentation on the agenda items at future meetings.

The meeting was adjourned at 4:25 p.m.

M. A. Farrell  
Secretary-Treasurer