

MINUTES OF REGULAR MEETING OF
THE BOARD OF TRUSTEES OF
THE INSTITUTE FOR ADVANCED STUDY

OCTOBER 19, 1945

A regular meeting of the Trustees of the Institute for Advanced Study was held in Fuld Hall, Princeton, New Jersey on Friday, October 19, 1945 at 1:30 P. M.

PRESENT: Messrs. Aydelotte, Bamberger, Fulton, Leidesdorf, Lewis, Maass, Moe, Rosenwald, Schaap, Veblen and Weed.

ABSENT AND EXCUSED: Messrs. Douglas, Hardin, Strauss and Wolman.

Mr. Maass presided.

The minutes of the regular meeting of the Board of Trustees and the annual meeting of the Members of the Corporation held April 20, 1945 were approved as circulated.

On motion of Dr. Fulton, duly seconded and passed, the actions of the Executive Committee as recorded in the minutes of its meeting held on June 5, 1945 were approved.

Mr. Leidesdorf presented a brief report for the Treasurer and the Finance Committee. He called the attention of the Board to the fact that the market value of the securities in the Institute's portfolio exceeded their book value by about \$1,700,000 and added that copies of the Auditor's Report giving complete details would be sent to each member of the Board in two or three weeks' time.

Mr. Veblen presented the following report for the Committee on Buildings and Grounds.

"The Committee on Buildings and Grounds has been negotiating with Mr. Maxwell for the sale of a strip of land running south from a point approximately opposite to Fuld Hall to the canal. In the course of these negotiations Mr. Maxwell has offered the Institute a larger piece of land, indeed all he owns except for a strip 440 feet wide parallel to Mercer Street surrounding his house. This parcel of land consists of 143 acres on which there are three dwelling-houses and a garage. Mr. Maxwell's price was \$100,000. The officers of the Board suggested \$65,000. Mr. Maxwell came down to \$87,000. Our offer was raised to \$75,000 and finally an agreement was reached at \$80,000. It is estimated that the three houses are worth from \$30,000 to \$35,000, so that the 143 acres of land may be estimated at \$45,000 or \$50,000. As a part of the bargain, Mr. Maxwell has granted a permanent right-of-way across his land to Mercer Street. The purchase unites two pieces of Institute land hitherto separated by Mr. Maxwell's holding; it places the Institute in a position to eliminate certain streets which had been laid out on the Township map by Mr. Olden before the Institute purchased the Olden farm; and it stops a real estate development project on the Maxwell land near Fuld Hall which would have been disadvantageous to the Institute. The Committee warmly recommends approval of this purchase.

After discussion, it was moved, seconded and unanimously carried that the acts of the officers of the Board in entering into the purchase of this land be approved and that the officers be authorized to close the contract for the purchase and accept the deed.

"Professor Lowe has an opportunity to sell his house to Dr. V. K. Zworykin of the RCA for \$30,000, a price which will enable Professor Lowe to realize a profit. The construction of Professor Lowe's house was financed by the Institute on very favorable terms. The final contract, however, contains a recapture clause whereby the Institute may regain possession of the land and house by payment of \$1,500, with interest at 4%, plus an amount representing the appraised value of the house at the time of resale. Professor Lowe has therefore offered the Institute a prior opportunity to purchase if the Trustees so desire. It is the opinion of the Committee on Buildings and Grounds that it would be better to allow Professor Lowe to make the sale to Dr. Zworykin since the price quoted is one which would make it impossible for the Institute to let the house at anything like a favorable return. Dr. Zworykin is head of the Research Department of the RCA and would be a very desirable resident to have on Institute property.

The matter was variously discussed by the Trustees, the discussion, among other things, going into the question as to whether any professor, the erection of whose home had been financed by the Institute, should, in the face of the recapture clause contained in the deed to such house, be entitled to earn a profit on the sale thereof, or whether such profit, if available, should not inure to the benefit of the Institute. The special circumstances applying to Professor Lowe's situation in connection with the Institute were emphasized, and thereupon, on motion, duly made and seconded, it was

RESOLVED that Professor Lowe be authorized to sell and dispose of his house to Dr. V. K. Zworykin on condition that the contract and deed to be made and entered into with Dr. Zworykin contain a recapture clause for the benefit of the Institute identical in all respects to that contained in the deed from the

Institute to Professor Lowe, except, however, that the price to be paid to Dr. Zworykin in the event of recapture by the Institute should be \$1,500.00 as land value without any interest thereon and the appraised value of the house at the time of recapture, to be ascertained and determined in the manner provided in the recapture clause;

FURTHER RESOLVED that this permission be granted to Professor Lowe solely because of the special circumstances applying to his situation and that the action taken by the Board in the instant situation shall not be deemed to establish a precedent in connection with the sale hereafter by any other professor of his home to any given purchaser.

"The Institute has received a request from the Mercer County Mosquito Extermination Commission for assistance in financing mosquito extermination near Princeton. It is recommended that this request be referred back to the Committee for further study in consultation with the authorities of Princeton University and Princeton Theological Seminary."

The recommendation was approved.

The Director presented the following report.

I

"The Institute this year has returned almost completely to its peacetime routine. Nearly all the members of the Faculty have given up their war work and are spending their entire time on research. The only exceptions are Professor Mitrany who remains in England and Professor von Neumann who is spending one-half of his time on a Navy contract of great scientific importance. I saw Professor Mitrany in London in July and said to him that I would recommend a continuation of his leave of absence for the academic year 1945-1946 without salary but that I was not prepared

to recommend further extension of his leave and that during this year he would have to decide whether he would return to the Institute or resign his professorship. Professor Mitrany thought this arrangement fair.

After discussion, the recommendation of the Director was approved with the understanding that Professor Mitrany be requested to notify the Board of his decision at its meeting on April 18, 1946.

II

"We have working at the Institute an extraordinarily interesting and able group of about fifty members and assistants. It would take more time than the Board can afford to hear the details of their record and of the projects upon which they are engaged. Instead of trying to comment on them in detail I have distributed a list which gives the bare facts about each individual and I shall be glad to answer any questions which Trustees may wish to ask concerning different individuals.

III

"The war service of the members of the Institute Faculty, now for the most part finished, has been extremely interesting and creditable. Fifteen members of the Institute Faculty have given part or all of their time to war work.

SUMMARY OF FACULTY WAR WORK

SCHOOL OF MATHEMATICS

Professor James W. Alexander: Operational research; defense against enemy mining operations; spent some time in England in 1942 at Headquarters of Bomber Command of Eighth Air Force working on the problem of improving the bombing accuracy of our planes over Germany. Published several confidential reports.

Professor Albert Einstein: Consultant to Navy Bureau of Ordnance doing his work in Fuld Hall.

Professor Marston Morse: Consultant to Army Bureau of Ordnance; ~~director~~^{member} of Applied Mathematics Panel, and consultant to NDRC on photogrammetry. Wrote some eighty technical reports, the most important being ballistic data, performance of ammunition. Did important work in the development of the so-called radio or proximity fuse. Received citation for meritorious civilian service from the Army Air Forces.

Professor John von Neumann: Consultant to Ballistic Research Laboratory of Army Ordnance Department at Aberdeen since 1937. Consultant to both Army and Navy on shock waves and theory of high explosives. Directed project for the Applied Mathematics Panel. Studying computing methods suited to very high-speed computing devices which will become available in the near future. Since September 1943 consultant to the Manhattan District at the laboratory at Los Alamos, doing work which was so highly confidential as to make it unsuitable to give details at this time. The researches with which von Neumann was concerned had to be omitted from the Smyth report.

Professor Oswald Veblen: Consultant throughout the war to the Army Bureau of Ordnance^{Department} at Aberdeen Proving Grounds, both on technical problems and on personnel; operational research for the Navy in connection with submarine mine warfare. Member of Applied Mathematics Panel; made one trip to England for the Army Air Forces, advising both on technical and personnel problems.

Professor Hermann Weyl: Special adviser to NDRC; ~~member~~^{consultant} of Applied Mathematics Panel; did research on shock waves in Fuld Hall.

SCHOOL OF ECONOMICS AND POLITICS

Professor Edward Mead Earle: In 1941 and 1942 assisted in the organization of the Division of Research and Analysis of the OSS. Since 1942 special consultant to the commanding general of the AAF for the purpose of organizing the advisory committee on bombardment, subsequently named Committee of Operations Analysts which made the plans for the bombardment of Germany and later of Japan. Made two trips to Europe as adviser to the Eighth and Ninth Air Forces and has now been commissioned to write the history of the heavy bombardment effort in the European theater of operations from 1942 to 1945. Published "Makers of Modern Strategy" which has been warmly received as the outstanding work dealing with that subject.

Professor David Mitrany: Has been on leave since 1939, first as a member of the Chatham House group working for the English Foreign Office, later as adviser on international affairs to Lever Brothers.

Professor Winfield W. Riefler: Assistant to the Secretary of the Treasury, September 1939 to January 1940. Drew up in July 1941 at the request of Vice-President Wallace, the first plan for the Board of Economic Warfare; Stationed in London, March 1942 to September 1944, first as Assistant to Ambassador Winant, then as head of the Economic Warfare Division in London with the rank of Minister, Professor Riefler built up an organization in which was concentrated all matters pertaining to the Anglo-American blockade of Germany, the management of the black list in the Eastern Hemisphere, economic and financial negotiations with European neutrals, the gathering and analyses of economic intelligence with respect to the enemy for the use of the armed forces and the civil government. Under this latter head, intimate and direct liaison was maintained with the Air Forces, the European Theater Commander, the American Naval Commander in European Waters.

Professor Walter W. Stewart: Full time adviser to the Secretary of the Treasury, September 1939 to 1940, and part time adviser 1940-1943.

Professor Robert B. Warren: Consultant to the United States Treasury throughout the whole period of the war on problems connected with the borrowing program and its relation to the banking system. Asked to go to Austria as a member of the American Mission in 1945, but finally felt it wisest to decline.

SCHOOL OF HUMANISTIC STUDIES

Professor E. A. Lowe: Member of Historians Committee studying the effect of the bombing of Germany. Assisted in the preparation of a handbook for use of our aviators on archives and libraries of Italy.

Professor Benjamin D. Meritt: Began in 1941 work for the Foreign Nationalities Branch of Colonel Donovan's organization which afterwards became the OSS. Supervised study of foreign language newspapers published by 36 foreign national groups within the United States. Spent a year in Washington in this work. Assisted in the preparation of a geographical handbook on Greece for the use of the Armed Forces.

Professor Erwin Panofsky: Assisted in preparation of maps and tables of information about cultural monuments in Germany for the use of American bombers. Drs. Weitzmann and Frankl assisted in the preparation of this book, and Dr. de Tolnay assisted in the preparation of a similar book covering the city of Paris.

Dr. Frank Aydelotte: Chairman, New Jersey Enemy Alien Hearing Board, 1941-1942; chairman, Committee on Scientific Personnel, OSRD, 1942.

IV

"I am happy to report that Professor Siegel has accepted the invitation of the Trustees to become a member of the Faculty of the School of Mathematics. Professor Pauli is not yet free to accept. His position in Zürich has been held open for him during the war and Professor Pauli feels that he must return to Switzerland, resume his position for a term or two and then resign before he can honorably accept our invitation. I thoroughly agree with the stand which he has taken. Professor Pauli cannot return to Switzerland until he has received American citizenship (for which he has now completed the necessary five years' residence) and has an American passport on which to travel. It is impossible to say how soon that will be. I should like to propose that meanwhile Professor Pauli be appointed Visiting Professor with a salary of \$10,000 as from July 1, 1945, this appointment to be in effect until such time as he returns to his post in Zürich.

After discussion in which the advantages of having Professor Pauli as a member of the Faculty were pointed out by Professor Veblen, the recommendation of the Director was approved.

"Before we were able to extend an invitation to Professor Viner I learned that he had been invited to a professorship in Princeton University. It is my opinion and that of all the members of our Faculty that under the circumstances it would be a mistake for two institutions in Princeton to compete for Professor Viner's services and we have consequently withheld our invitation. I understand that Professor Viner has refused the invitation from Princeton but it seems wise to me and to my colleagues that we should take no action in his case at least for the moment. I shall have a further recommendation to make on this matter in April. Other additions to the Faculty are being actively discussed and the names under consideration will be presented to the Board or the Executive Committee in due course.

V

"In order to save the time of the Board I am not undertaking at this moment to make a report on the work of the Institute for the last academic year. It will be fully described in Bulletin No. 12. I wish instead to ask the Trustees to consider at this moment certain plans for the future.

"Professor John von Neumann, a brilliant young mathematical physicist on our Institute staff, has for several years interested himself very much in the tremendous possibilities of contributions to mathematics, physics, biology, economics and statistics which might be made by an electronic computer which could operate roughly one thousand times as fast as the best

devices now in existence and which could consequently undertake problems which are at the present moment entirely out of the reach of any scholar in any of these fields.

"The design of such a machine would in itself be a difficult and interesting research problem. It is in a sense experimental but Professor von Neumann has acted as advisor in the designing of several machines for the Government during the war and has had a chance to see by the actual workings of such machines what could be done. He would like to design a computer which in power and simplicity of operation would go far beyond anything which now exists. I think it is soberly true to say that the existence of such a computer would open up to mathematicians, physicists and other scholars areas of knowledge in the same remarkable way that the two hundred inch telescope promises to bring under observation universes which are at the present moment entirely outside the range of any instrument now existing.

"Such an electronic computer could be built for a total cost of about \$300,000. It would be a new instrument of research of unprecedented power. Curiously enough the plan of such a machine is partly based on what we know about the operation of the central nervous system in the human body. This means, of course, that it would be the most complex research instrument now in existence. It would undoubtedly be studied and used by scientists from all over the country. Scholars have already expressed great interest in the possibilities

of such an instrument and its construction would make possible solutions of which men at the present moment can only dream. It seems to us very important that the first instrument of this quality should be constructed in an institution devoted to pure research though it might have many imitations devoted to various practical applications.

"I have in mind various sources from which it seems reasonable to suppose financial assistance can be secured for the construction of this important machine. It is my hope that the entire amount needed can be obtained from one or more of these sources. I wish to recommend, however, that the Trustees should underwrite this project to the extent of \$100,000. That amount will be available from surplus income during the period of three years which will be needed to build the machine and the assurance of that fund will enable Professor von Neumann to take steps immediately to begin his work. This support from the Trustees may indeed be the best possible way of securing additional funds and making any expenditure on our part unnecessary.

In the discussion which followed, the importance of this project as indicated by the expressed interest of other organizations was pointed out and the consequent advisability of starting the work in Princeton under the auspices of the Institute was emphasized. Prompt action by the Trustees will also make it easier for the Institute to secure outside financial support which the Director confidently expects will be forthcoming. The fact that the Institute has not heretofore engaged in laboratory sciences should not be considered binding in this case. Professor Veblen said that it was his belief that plans for this computer had now developed far enough to predict its probable success. It will, of course, be necessary for the Institute to provide space in which to house this machine. It was the opinion of the Director that

the most satisfactory way to do this would be to erect a small building at a cost of say \$50,000 similar to the wings of the Institute.

On motion, duly seconded and passed, it was resolved that the Institute appropriate from surplus income an amount up to but not exceeding \$100,000 to be expended from time to time over a period of years for the purpose of enabling Professor von Neumann to begin work on plans and development for the construction of an electronic computer with the understanding that the Institute shall try to secure funds from outside sources for financing the project in part or in its entirety and that if suitable financial support cannot be found, the project shall be reviewed by the Board and a future course of action determined in the light of the evidence presented.

VI

"Two other matters require action at this time. I should like to recommend that Miss Goldman be given leave of absence with full salary for the academic year 1946-1947 in order to carry on certain excavations in Turkey which are necessary for the completion of her next book. When Miss Goldman was appointed to the Institute it was understood that she would spend a part of each year in field work. This because of the war she has been unable to do. She retires in June 1947 and while she expects to continue her work for many years during the period of her retirement, she is eager to complete the excavations in which she is interested at the earliest possible moment after the war.

On motion, duly seconded and carried, the recommendation of the Director was approved.

"I should like to recommend that the Institute bear the expense of hospital insurance for our janitors, groundsmen and employees of that grade. The total cost would be about \$250. Princeton University carries such insurance and indeed has still further welfare privileges in the form of a group life insurance

policy and a pension plan. At some future time we may find it necessary to adopt similar measures but at the moment I wish to recommend only hospital insurance."

On motion, duly seconded and passed, the recommendation of the Director that the Institute bear the expense of hospital insurance for janitors, groundsmen and employees of that grade was approved.

As an addition to his report given above, the Director informed the Trustees that because of the illness of his wife, Professor Panofsky had declined the invitation to lecture at the University of Chicago for which the Trustees had granted him leave of absence at their meeting of December 5, 1944. The Director also stated that the arrangements whereby Professor Warren was to undertake a Government mission to Austria were not satisfactorily completed and Professor Warren did not take the leave of absence which the Board granted him at its meeting of January 19, 1945.

As Chairman of the Budget Committee, Dr. Weed presented the budget for 1945-1946. It is substantially the same as the budget of last year, the only changes being the addition of Professor Siegel to the Faculty, the appropriation of funds for stipends already voted by the Trustees and the appointment of Professor Pauli to a Visiting Professorship. The total proposed expenditure of \$435,000 may be compared with a prospective income for this year of about \$535,000.

In the discussion which followed, the need for allocating additional funds for stipends for the second term was indicated. Such action would enable the Institute to get back on a peace-time basis more rapidly and would also make it possible to give young men recently discharged from the armed forces an opportunity to do research before returning to positions in the academic field.

It was thereupon moved, seconded and carried that the budget for 1945-1946 be approved with the understanding that the Director in consultation with Mr. Leidesdorf be authorized to increase the amount expended in stipends if that should be necessary to provide for exceptionally meritorious individuals. A copy of the budget will be included in the Auditor's Report.

It was moved, seconded and carried that the next meeting of the Board of Trustees be held on Thursday, April 18, 1946 and that meetings of the Executive Committee be scheduled for Tuesday, December 18, 1945 and February 19, 1946.

The Board voted to accept the gift to the Institute from the Class of 1945 of the Chester High School, Chester, Vermont, of the Chester High School Peace Fellowship. This fund which will mature in about ten years will be used either to enable a foreign student to study in the United States or to assist an American student to study abroad. The Director was instructed to acknowledge this gift with all due thanks and appreciation.

The Chairman announced the appointment of Lewis L. Strauss, recently elected Trustee, to membership on the Finance Committee and said that the appointment of Wilmarth S. Lewis, also recently elected to the Board, to a committee would be made in the near future.

There being no further business, on motion the meeting adjourned.)

(Signed) Edgar S. Bamberger
Secretary