December 3, 1975

Dear Michael:

    Mr. Segal will be glad to see you if you can
go to New York late on the afternoon of the 9th.
How would 4:00 p.m., for a meeting of 1 to 1 1/2
hours duration be? He would meet you at Martin
Segal Company, 730 Fifth Avenue, 5th floor.

                    Cordially,

                    Carl Kaysen

Dr. Michael Atiyah
School of Mathematics

UNIVERSITY OF OXFORD

M. F. ATIYAH, F.R.S.
Royal Society Research Professor

Mathematical Institute
24-29 St Giles
Oxford OX1 3LB

Telephone 54295

25 February, 1975

Dear Carl,

    This is just to confirm that I have now had formal
approval from the Royal Society to enable me to spend
next Fall term in Princeton.   I look forward very
much to my visit.

    With best wishes,

           Yours,

           Michael

Dr Carl Kaysen,
Institute for Advanced Study,
Princeton,
N.J. 08540,
U.S.A.

Mr. Pope
Mr. Morgan

Pls. retn. to D.O.

UNIVERSITY OF OXFORD

M. F. ATIYAH, F.R.S.
Royal Society Research Professor

Mathematical Institute

24-29 St Giles

Telephone 54295

Oxford OX1 3LB

6 January, 1975

Dear Carl,

Many thanks for your letter of 13 December offering me membership
in the Institute for the first term 1975/76. I fully expect to take
up this invitation, although from a formal point of view I first need
the approval of the Royal Society. However, I anticipate no
difficulty in this direction, and will let you know as soon as I
receive formal confirmation.

Perhaps I should say that although I would hope to be in Princeton
for the bulk of the term, I have a number of professional commitments
in this country which it would be difficult to avoid. This will
probably mean that my stay in Princeton will be slightly truncated,
and possibly interrupted briefly in the middle.

With best wishes,

Yours,

Michael

Dr Carl Kaysen,
The Institute for Advanced Study,
Princeton,
N.J. 08540,
U.S.A.

The School will pay the rent for the apartment.   cc. Mr. Morgan
                                                            Mr. Pope
                                                            Miss Underwood

                                                    December 13, 1974

Professor Michael F. Atiyah
Mathematical Institute
University of Oxford
24-29 St Giles
Oxford OX13LB
England

Dear Professor Atiyah:

        On the recommendation of the Faculty in the School of Mathematics,
I am pleased formally to offer you a membership in the Institute for
Advanced Study for the first term of 1975-76. The term dates are:
September 22 to December 19, 1975. In general, members are expected
to be in residence during term time except for short absences; absences
of more than a few days should be discussed with the appropriate
officer of the School. We will be happy to provide you with an apartment
free of charge.

        We all look forward with pleasure to having you with us again for a
visit, and we would find it most helpful to have a response to our
invitation as soon as possible.

                                                    Sincerely yours,

                                                    Carl Kaysen

Enclosure (DSP)

September 28, 1972

Memorandum to Mr. Morgan

This will authorize you to charge
Professor Atiyah's travel fund $350 and re-
imburse him in that amount for his round
trip Oxford-Princeton as indicated on the
attached.

Ruth E. Bortell

Attachment

cc: Professor Atiyah

August 1, 1972

Dear Michael:

        Thanks for your note which I shall file
under capital "R" for "great Regret."

        The Conference papers which we are working on
now for the Daedalus volume look quite interesting. I
think the Times report on the whole was not bad, although
I agree that it was hardly accurate in detail. In any
event your contribution will be part of the correct record
when we get the Daedalus issue out.

        I look forward to seeing you in the fall.

                        As ever,

Professor Michael Atiyah
Mathematical Institute
24-29 St. Giles
Oxford OX1 3LB
England

mfa:sw

<div align="right">

UNIVERSITY OF OXFORD

Mathematical Institute

24-29 St Giles

Oxford OX1 3LB

</div>

Telephone Oxford (0865) 54295

24th July, 1972

Dear Carl,

    I am now writing to confirm formally and with great
regret my resignation from the Institute, as from 1st January
1973. My negotiations here are now essentially complete
and an official announcement will be made within the next week
or so. Once again, I should like to thank you for your
help and consideration throughout my time in Princeton and,
especially,for your assistance during the last few months.

    I enjoyed the von Neumann conference, although I regret
that I was not able to stay very long. It was interesting
meeting the various distinguished visitors and I hope that
it all went well from your point of view. I am afraid the
version I saw in the New York Times contained a very garbled
account of my own modest contribution, but I suppose journalists
tend to be rather out of their depths on such occasions.

<div align="right">

Best wishes,

Yours,

Michael

</div>

Dr. Carl Kaysen,
Director of the Institute of Advanced Study,
Princeton, NJ 08540
USA

Copy - For information

UNIVERSITY OF OXFORD

Mathematical Institute

24-29 St Giles

Oxford OX1 3LB

Telephone Oxford (0865) 54295

MFA/AP

15 May 1972

Dear Colleagues,

I am writing to let you know that, after much deliberation, I have decided to return permanently to England. I have been offered, and have accepted, a Royal Society Research Professorship which I shall hold at Oxford University. There are still some formalities to be gone through, but I thought I should let you know now to anticipate the rumours which will inevitably start circulating through the mathematical grape-vine.

Because this is late in the academic year and I have a number of moral commitments to the Institute for next year, including my assistant Nigel Hitchin, I feel bound to postpone this appointment for a little while. However, my family, for scholastic and other reasons, will return to England permanently this summer. As a compromise therefore I hope it will be acceptable if I resign as from 1 January, 1973 allowing me to spend the Fall Term in Princeton.

I want to make it clear that my reasons for returning to England are entirely personal ones, involving considerations of my family. While my new appointment offers me freedom from teaching and administration I realize that, in other matters, it is unlikely to reproduce the great mathematical advantages and atmosphere of the Institute.

My years at the Institute, though short in number, have been active and fruitful mathematically. I hope that, in return, I have contributed something to the mathematical life of the Institute during my stay.

Everybody connected with the Institute has been most helpful and cooperative to us these past few years and we shall in many ways be sorry to leave Princeton. I hope that, from time to time in the future, it will be possible for me to visit Princeton and renew my contacts with the mathematical community there.

Yours sincerely,

Michael Atiyah

Michael F. Atiyah.

Institute for Advanced Study,
Princeton,
New Jersey 08540,
U.S.A.

THE INSTITUTE FOR ADVANCED STUDY

PRINCETON, NEW JERSEY 08540

Telephone-609-924-4400

THE DIRECTOR

May 30, 1972

To the Members of the Board of Trustees

Dear Ladies and Gentlemen:

The attached regretfully speaks for itself.
As far as I can tell there is no judgment of the
Institute involved but only a personal and family
choice between England and the United States.

The discussion of the arrangement about
the date of resignation in the second paragraph is
a matter of courtesy. Professor Atiyah and I have
already agreed to the arrangements he proposes.

Sincerely,

Carl Kaysen

Mrs. Gray
Messrs. Dilworth, Forrestal, Hansmann, Houghton, Linder,
Petersen, Roth, Segal, Simon, Solow, Straus,
Taplin

THE INSTITUTE FOR ADVANCED STUDY

PRINCETON, NEW JERSEY 08540

Telephone-609-924-4400

THE DIRECTOR

May 30, 1972

Memorandum to the Faculty

Dear Colleagues:

I inform you with great regret of the
resignation of Professor Michael Atiyah of the
School of Mathematics, effective 1st January, 1973.
The attached letter is from Professor Atiyah to
his colleagues in the School explaining the circum-
stances of his resignation.

Cordially,
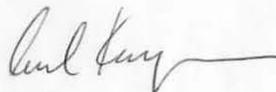
Carl Kaysen

Professors Cherniss, Clagett, Gilbert, Gilliam, Kennan,
          Meiss, Setton, Thompson, White

Professors Adler, Bahcall, Dashen, Dyson, Regge,
          Rosenbluth

Professor Geertz

cc: Mr. Morgan

5th May 1972

Dear Carl,

Many thanks for your understanding reply. Lily had already told me that you were being very sympathetic.

As you say, news tends to leak, and I will delay no longer than necessary. There are however a few points which I have to discuss with the Royal Society before I sign on the dotted line and this will take a week or two. I hope at least that things will be finally cleared up before my return to Princeton late this month (around the 26th).

It seems fairly clear that 1 Jan 1973 is the date on which I should officially resign, and that would give me the fall term in Princeton. In order not to be away too long from my family I hope I could take a week or so off in mid-term for a brief visit to Oxford. I hope also that it would be acceptable for Hitchin to stay the full year in Princeton even though I will be leaving in December.

I have not thought in detail about the disposal of our house, but it would seem unnecessary for me to keep up such a mansion merely for my own use in the Fall. If we arranged the transfer to the Institute during the summer would it be possible for me to be allocated an apartment on the project for the Fall? Presumably we can discuss these questions further when

I get back to Princeton.

I have now received Ulam's manuscript and will do my best to come up with some constructive thoughts on the subject.

I certainly hope to visit the Institute from time to time in the future, assuming I am not ostracized by my former colleagues.

with best wishes

Yours

Michael Atiyah

May 3, 1972

Dear Michael:

I can hardly thank you for the news in your letter of the
29th April, but I appreciate very much its tone. Let me say only that
I shall miss you deeply and that the contribution you have made to the
non-mathematical life of the Institute has been of the greatest importance.
I am sure I shall value it even more in its absence.

I am certain you have made your decision after much careful
thought, and I accept it as your own wisest judgment in a matter in which
you must be the judge. I hope that you will continue to be a frequent
visitor here and that Lily will be willing to join you from time to time.

As to the practicalities -- I have had a word with Lily to
express my regrets and to let her know that we are ready to help in any
way. I shall wait for you to communicate with your colleagues in the
School before I talk to anyone else. However, it would be desirable for
several reasons to make your decision formal and public without too long
a delay, since it will begin to leak soon. I agree with you that a reso-
lution of the problems you pose--namely, the status of Hitchin and the
feelings of people who will be coming next term in the expectation of
seeing you -- may best be found if you remain here for the Fall Term and
resign as of 1 January, 1973. This is entirely acceptable to me, and I
am sure your colleagues will agree. This arrangement would also have the
advantage from my point of view that you could participate to some extent
in the choice of a successor, and I am sure this would be helpful.

We can deal with the house however your convenience suggests.
I would rather wait to talk to Bahcall until you have resigned formally.
The financial arrangements between you and the Institute with respect to
the house can be handled in whatever way will be most helpful to you once
we have set a date for the termination of your ownership.

You will be glad to know that I have had a rather favorable
tentative response from John Elliott, and I hope he will understand that
your own situation is idiosyncratic and carries no lessons for him.

With great regret and warmest good wishes,

Cordially,

Carl Kaysen

Professor Michael Atiyah
Mathematical Institute
University of Oxford
Oxford OX 1 3LB, England

Strictly Confidential

UNIVERSITY OF OXFORD

Mathematical Institute
24-29 St Giles
Oxford OX1 3LB

Telephone 0092 54295

29th April 1972

Dear Carl,

I am afraid I have some bad news for you. In brief, I have decided, after much hesitation, to return permanently to England. I have been offered, and am accepting, a Royal Society Research Professorship. Although this has been in the air for a while I only received the official news a day before my departure from Princeton. This did not really leave me with adequate time to see you about it personally, as I would much rather have done. It's difficult in a letter to say all I would like to say about such a complex and important matter.

My reasons for wishing to return are primarily family considerations. I have found the Institute a very conducive atmosphere for my work and I have no complaints at all on that score. I also appreciated your personal help and understanding in practical matters such as housing. In fact we have thoroughly enjoyed living in the Whitney house on Maxwell Lane — it suited us admirably. However it has become increasingly clear to me that my wife would never become reconciled to life in America. Such things are not easily rationalised but they are facts of life nonetheless. Please don't misunderstand me and put the

She has been very long-suffering about all this and the initiative in deciding to return was entirely mine.

I shall be sorry to leave the Institute for a variety of reasons. In particular I felt that I helped to mediate somewhat between my mathematical colleagues and the rest of the Institute — a task which I felt to be necessary though not particularly enjoyable! As you know I did not share the extreme scepticism of some of my colleagues towards the developments in Social Science. I wish you + Cliff Geertz the best of luck in this enterprise.

To return now to the technicalities of my situation. Although I have formally indicated to the Royal Society my acceptance in principle, there are sundry matters of detail still to be negotiated with them and also with Oxford University. This may take a little time — a few weeks perhaps. Until that is cleared up I will not send you a formal resignation and the matter is still not public knowledge. I am also uncertain about the starting date, which can be any time after 1 October 1972. From the point of view of my family it seems highly desirable for them to stay in England once they return this summer. Because of the short notice I feel myself under some obligation to return to the Institute for at least part of next year, although I am naturally very reluctant to be separated from my family for any length of time. My main

UNIVERSITY OF OXFORD

Mathematical Institute
24-29 St Giles
Oxford OX 1 3LB

Telephone 0092 54295

concern is the rather ambiguous position of my assistant Nigel Hitchin. If the Royal Society had made up its mind more quickly I might have been able to make other arrangements for him. As it is he is banking on a second year in Princeton and I am sure this will be good for him. There are of course several of next year's members who would be rightly disappointed by my absence and I feel some obligation towards them. My present inclination therefore is to come to Princeton for the Fall term and take up my new appointment on 1 Jan 73.

There are of course practical and mundane matters to be dealt with such as disposing of our house. I imagine there will be no shortage of potential buyers — John Bacall for one has cast envious eyes in that direction several times. Anyway we can discuss such questions when I return in June, by which time my plans may be a little clearer.

This letter puts on paper what I would rather have explained in person, so please treat is a personal letter and not one to be circulated to Faculty or Trustees. At a later stage I thought I would write a few words which could be sent to my mathematical colleagues.

I also thought I should, in all fairness, write at an appropriate stage to John Elliott. We were naturally rather embarrassed at the situation earlier in the spring

... to feel we missed him in any way. Naturally I will still do my best to persuade him to accept the Institute offer.

While in Paris I saw Zeeman and he intimated to me that his Institute at Warwick is sceptical about the new organization (FIAS) and feels that mathematics has little to contribute to such an enterprise.

I have received a preliminary note from Ulam and look forward to getting the complete list shortly.

Once again I am sorry I am letting you down in this way, particularly since you have always been so helpful to me. On the other hand I feel I have given a few of my best years to the Institute, so that my excursion there has not been without point. In fact if you could get a steady stream of mathematicians like Hörmander & myself to spend 3 or 4 years in Princeton, the return might almost justify the effort! At least it would prevent senility in the mathematics Faculty.

I am going to be in frequent telephone contact with my wife over the next few weeks, so you can discuss matters with her if you think it is helpful.

with best wishes.

Yours

Michael Atiyah

May 3, 1972

Dear Michael:

I can hardly thank you for the news in your letter of the
29th April, but I appreciate very much its tone. Let me say only that
I shall miss you deeply and that the contribution you have made to the
non-mathematical life of the Institute has been of the greatest importance.
I am sure I shall value it even more in its absence.

I am certain you have made your decision after much careful
thought, and I accept it as your own wisest judgment in a matter in which
you must be the judge. I hope that you will continue to be a frequent
visitor here and that Lily will be willing to join you from time to time.

As to the practicalities -- I have had a word with Lily to
express my regrets and to let her know that we are ready to help in any
way. I shall wait for you to communicate with your colleagues in the
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several reasons to make your decision formal and public without too long
a delay, since it will begin to leak soon. I agree with you that a reso-
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feelings of people who will be coming next term in the expectation of
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You will be glad to know that I have had a rather favorable
tentative response from John Elliott, and I hope he will understand that
your own situation is idiosyncratic and carries no lessons for him.

With great regret and warmest good wishes,

Cordially,

Carl Kaysen

Professor Michael Atiyah
Mathematical Institute
University of Oxford
Oxford OX 1 3LB, England

THE INSTITUTE FOR ADVANCED STUDY

PRINCETON, NEW JERSEY 08540

SCHOOL OF MATHEMATICS

7 Dec. 69

Dear Carl,

Many thanks for the colourful photographs. We are most appreciative.

Yours

Michael

PROFESSOR ATIYAH'S CHILDREN:

John E.	born	February 28, 1957
David M.	"	November 20, 1958
Robin F.	"	March 31, 1963

March 24, 1969

Dear Deane:

Here are two copies of a revised
letter of appointment to Professor Atiyah.
I have backdated it to substitute for the
original letter which failed to mention his
sabbatical entitlement and was somewhat cloudy
in its description of his academic duties.
Please substitute these for the letters you
have in your files.

Cordially,

Carl Kaysen

Professor Deane Montgomery
Institute for Advanced Study

Enclosures (2)

cc: Mrs. Barnett
Mr. Morgan
Miss Underwood
Prof. Montgomery

January 10, 1969

Professor Michael Atiyah
University of Oxford
Mathematical Institute
24/29 St. Giles
Oxford, England

Dear Michael:

I write formally to invite you to join the Institute for
Advanced Study as Professor in the School of Mathematics beginning
1 July, 1969. Your appointment has been unanimously proposed by the
Faculty of the School of Mathematics; it has been put before the whole
Faculty who have concurred in it; and it has been approved by the
Board of Trustees.

As you know, the professorship is a tenure appointment
until our current retirement age of 70. The present salary level for
professors is $35,000 per annum. In addition there is $1,500 tax free
allowance for professional travel, plus the opportunity to employ an
assistant if you wish at a salary level roughly equivalent to the stipend
of a member. Further, there are certain fringe benefits with respect to
pension, health insurance, and housing, the details of which you can
discuss with the business office.

Each professor is entitled to a sabbatical every sixth year
which permits him to take either a full year's leave at half pay or a
half year's leave at full pay. The precise time of the sabbatical is
subject to the need for an orderly arrangement of the business of the
School so that not too many Faculty members are absent in any given year.

The duties of a professor are essentially of three kinds.
The first and most important is to pursue his own research. The second
is in respect to the temporary members of the Institute. A professor
participates with his colleagues in the School of Mathematics in the
selection of members from among the applicants each year. He also should
be available as appropriate to consult with members in respect to their
research. The third is in respect to the general governance of the In-
stitute in academic matters. Each professor shares with his colleagues
in his School the responsibility for nominations to professorial appoint-
ments in that School. He shares with the whole Faculty a responsibility

for advising the Director on Faculty appointments and on matters of
academic policy. The nature of these responsibilities, especially
those connected with the temporary members, is such as to require a
professor in general to be in residence during the academic year at
the Institute from the end of September through the beginning of April.

My colleagues and I are all looking forward to your
decision to join us.

With warmest good wishes,

Cordially yours,

Carl Kaysen

Replaced by attached

cc: Mrs. Barnett
Mr. Morgan
Miss Underwood
Prof. Montgomery

January 10, 1969

Professor Michael Atiyah
University of Oxford
Mathematical Institute
24/29 St. Giles
Oxford, England

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for professors is $35,000 per annum. In addition there is $1,500
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details of which you can discuss with the business office.

The duties of a professor are essentially three: first
and most important, to pursue his own research; second, to be in
residence during the academic year at the Institute from the end of
September through the beginning of April, and be available as is ap-
propriate to consult with members with respect to their own research;
third, to participate with his colleagues in the School of Mathematics
in the selection of members from among the applicants each year.

My colleagues and I are all looking forward to your
decision to join us.

With warmest good wishes,

Cordially yours,

Carl Kaysen

December 10, 1969

Dear Michael:

Here are some enlargements of the
pictures we took of you at the welcoming party,
which I finally got around to have produced.
I am somewhat embarrassed to send you the one
including myself, but you need not tell me what
you have done with it!

Cordially,

Carl Kaysen

Professor Michael Atiyah
Institute for Advanced Study

Enclosures

Institute Appoints Three Professors

The Institute for Advanced Study has announced the appointment of three new professors.

Michael Francis Atiyah has been named professor in the School of Mathematics. He comes to the Institute from Oxford University where he holds the Savilian Chair of Geometry.

Professor Atiyah was born in London in 1929, and received his B.A. and Ph.D. degrees from Cambridge University. He was a Fellow of Trinity College, Cambridge, and moved in 1961 to Oxford, where he was a Fellow of St. Catherine's College until he took up the Savilian Chair.

He has made fundamental contributions to the fields of topology, partial differential equations, and algebraic geometry. His single most striking result was achieved in the index theorem (with I. M. Singer) which relates fundamental properties of systems of differential equations to topological properties of manifolds.

In 1966, Professor Atiyah was one of the four recipients of the Fields Medal at the International Congress of Mathematicians. This medal is the highest professional honor a mathematician can receive. He is a Fellow of the Royal Society and, in 1968, received one of the Society's Royal Medals.

Stephen L. Adler and Roger F. Dashen have been named professors in the School of Natural Sciences. Both are theorists in the field of high energy particle physics.

Dr. Dashen has been professor of theoretical physics at California Institute of Technology, from which he has been on leave as a visiting member at the Institute for the last several years.

Dr. Adler, also presently a visiting member, was a research assistant at California Institute of Technology and a junior fellow of the Society of Fellows at Harvard.

Dr. Adler received his A.B. from Harvard in 1961 and his Ph.D. from Princeton in 1964. His major work has been in the field of high energy particle interactions.

Dr. Dashen received his A. B. degree from Harvard in 1960 and his Ph.D. from California Institute of Technology in 1964. The central theme of Dr. Dashen's work has been the search for a unified view of the various theoretical models that have been found useful in explaining the phenomena of high energy particle interactions. He has sought out the common elements in S-matrix theories, "bootstrap" theories, and current algebra as approaches to the explanation of the phenomenology of high energy interactions.

-0-

London Observer, U.N. Secretariat, N.Y.

London Times, 201 East 42nd St., N.Y.

Manchester Guardian, 20 East 53rd St., N.Y.

Sunday Times of Great Britain, 50 Rockefeller Plaza

NY Times
Washington Post
Newark News
Trenton Times
Science

Mailed 6-6-69 to:
Town Topics
Princeton Packet
R. Hobart Ellis, Jr., Editor
PHYSICS TODAY
American Inst. of Physics
335 East 45 St., N.Y. 10017

Press Release mailed 5/23/69
Copy to CJ Underwood 5-26-69

The Institute for Advanced Study announces the appointment of Michael Francis Atiyah as Professor in the School of Mathematics. Dr. Atiyah comes to the Institute from Oxford University where he ~~held~~ the *holds* Savilian Chair of Geometry.

Atiyah was born in London in 1929, and received his ~~A.B.~~ *B.A.* and Ph.D. degrees from Cambridge University. He was a Fellow of Trinity College, Cambridge, and moved in 1961 to Oxford, where he was a ~~member~~ *Fellow* of St. Catherine's College until he took up the Savilian Chair. He is married ~~to Lily Jane Brown, herself a mathematician~~, and ~~they have~~ *has* three sons.

Professor Atiyah has made fundamental contributions to the fields of topology, partial differential equations, and algebraic *geometry.* He has been one of the leaders in the developments which in recent years have brought a deeper unification of mathematics, by the merging of what a generation ago were considered separate fields with distinct problems. His single most striking result was achieved in the index theorem (with I. M. Singer) which relates fundamental properties of systems of differential equations to topological properties of ~~complex~~ manifolds.

In 1966, Professor Atiyah was one of the four recipients of the Fields Medal at the International Congress of Mathematicians. This medal is the highest professional honor a mathematician can receive.

Professor Atiyah will come to Princeton to take up his duties at the opening of the 1969-1970 academic year. He intends to maintain an active connection with mathematical research in England, and in particular with that at Oxford, which the Institute's arrangements for inviting short-term visitors will greatly facilitate.

He is a Fellow of the Royal Society and , in 1968, received ~~one~~ one of the Society's Royal Medals.

THE INSTITUTE FOR ADVANCED STUDY

PRINCETON, NEW JERSEY 08540

FOR RELEASE:

Wednesday, May 28, 1969

For further information:

Mrs. Paul Bortell, Jr.
Tel. 609-924-4400

The Institute for Advanced Study announces the appoint-
ment of Michael Francis Atiyah as Professor in the School of
Mathematics. Dr. Atiyah comes to the Institute from Oxford
University where he holds the Savilian Chair of Geometry.

Atiyah was born in London in 1929, and received his
B.A. and Ph.D. degrees from Cambridge University. He was a
Fellow of Trinity College, Cambridge, and moved in 1961 to Oxford,
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the Savilian Chair. He is married and has three sons.

Professor Atiyah has made fundamental contributions to
the fields of topology, partial differential equations, and algebraic
geometry. He has been one of the leaders in the developments which
in recent years have brought a deeper unification of mathematics,
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-more---

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****

INSTITUTE FOR ADVANCED STUDY

K-Theory and Related Topics

Speaker: M. F. Atiyah

Topic: VECTOR FIELDS ON MANIFOLDS

Time: Wednesday, December 3, 1969, at 10:30 a.m.

Place: Fuld Hall Lecture Room 119

INSTITUTE FOR ADVANCED STUDY

K-Theory and Related Topics

Speaker: Professor M. F. Atiyah

Topic: RIEMANN SURFACES AND SPIN STRUCTURES

Time: Wednesday, March 25, 1970, at 10:30 a.m.

Place: Fuld Hall Lecture Room 119

INSTITUTE FOR ADVANCED STUDY
K-Theory and Related Topics

Speaker: M. F. Atiyah

Topic: VECTOR FIELDS ON MANIFOLDS, continued

Time: Wednesday, January 14, 1970, at 10:30 a.m.

Place: Fuld Hall Lecture Room 119

INSTITUTE FOR ADVANCED STUDY

Seminar in Topology

Speaker: Michael Atiyah

Topic: INVOLUTIONS ON SPHERES

Time: Thursday, November 5, 1970, at 11:00 a.m.

Place: Fuld Hall Lecture Room 119

INSTITUTE FOR ADVANCED STUDY

K-Theory and Related Topics

Speaker: M. F. Atiyah

Topic: VECTOR FIELDS ON MANIFOLDS, continued

Time: Wednesday, December 10, 1969, at 10:30 a.m.

Place: Fuld Hall Lecture Room 119

INSTITUTE FOR ADVANCED STUDY

Professor Michael Atiyah will give a series of

lectures on ELLIPTIC OPERATORS AND COMPACT GROUPS

on Wednesdays at 11:00 a.m. in ~~Fuld Hall Lecture~~ Library Wing

~~Room 119~~ beginning January 20, 1971.

limited
per CDU 4/1/71

INSTITUTE FOR ADVANCED STUDY
K-Theory and Related Topics

Speaker: M. F. Atiyah

Topic: SPIN MANIFOLDS AND GROUP ACTIONS

Time: Wednesday, October 29, 1969, at 10:30 a.m.

Place: Fuld Hall Lecture Room 119

May 7, 1969

Dear Michael:

Attached are two items, a copy of my letter to Dupont and a draft of a proposed press announcement.

The language of the appointment letter is designed to give Dupont the most advantageous tax arrangement without changing the fact that he comes to work as your assistant.

Please add to, subtract from, or otherwise transform this announcement in any way you think suitable. I have no confidence in my attempt to write an apparently intelligible statement about your work, and I would be glad for any improvement that you wish to make. While biographical details don't present quite the same problems, please change them in accordance with your wishes.

Cordially,

Carl Kaysen

Professor Michael F. Atiyah
University of Oxford
Mathematical Institute
24-29 St. Giles
Oxford, England

Enclosures (2)

The Institute for Advanced Study announces the appointment of
Michael Francis Atiyah as Professor in the School of Mathematics. Dr.
Atiyah comes to the Institute from Oxford University where he held the
Savilian Chair of Geometry.

Atiyah was born in London in 1929, and received his A.B. and
Ph.D. degrees from Cambridge University. He was a Fellow of Trinity
College, Cambridge, and moved in 1961 to Oxford, where he was a member
of St. Catherine's College until he took up the Savilian Chair. He is
married to Lily Jane Brown, herself a mathematician, and they have three
sons.

Professor Atiyah has made fundamental contributions to the
fields of topology, partial differential equations, and algebra. He
has been one of the leaders in the developments which in recent years
have brought a deeper unification of mathematics, by the merging of
what a generation ago were considered separate fields with distinct
problems. His single most striking result was achieved in the index
theorem (with I. M. Singer) which relates fundamental properties of
systems of differential equations to topological properties of complex
manifolds.

In 1966, Professor Atiyah was one of the four recipients of
the Fields Medal at the International Congress of Mathematicians. This
medal is the highest professional honor a mathematician can receive.

Professor Atiyah will come to Princeton to take up his duties
at the opening of the 1969-1970 academic year. He intends to maintain
an active connection with mathematical research in England, and in par-
ticular with that at Oxford, which the Institute's arrangements for
inviting short-term visitors will greatly facilitate.

To Caroline Underwood

Excerpt from letter of 30th April from Michael Atiyah
to Carl Kaysen:

"... Concerning my assistant for next year, you
will recall that I wanted to have J. L. Dupont of
Aarhus University. I discussed the financial question
with Deane and, in view of Dupont's Fellowship, we
decided that a figure of $4,500 would be appropriate...".

SENDER'S NAME AND ADDRESS

Professor M.F. Atiyah,

University of Oxford,

Mathematical Institute,

24-29 St. Giles,

Oxford, England.

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NOT CONTAIN ANY ENCLOSURE;
IF IT DOES IT WILL BE SURCHARGED
OR SENT BY ORDINARY MAIL

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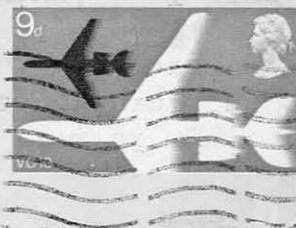
Mrs. P. Bortell, Jr.,

Secretary to Dr . Kaysen,

Institute for Advanced Study,

PRINCETON,

New Jersey 08540,

U.S.A.

University of Oxford,

Mathematical Institute,

24-29 St. Giles,

Oxford, England.

17th March, 1969.

Dear Mrs. Bortell,

    I am sorry if I have left the time of my
arrival vague. I shall in fact be arriving on
Saturday, 22nd and all being well, I will arrive
at Princeton Airport at 5.10 p.m. I would, of
course, be glad to be met on my arrival. I have
also written to Professor Montgomery concerning
my plans and perhaps you could just check with him
to make sure that I am not met by two separate
arrival parties.

    Many thanks.

Yours sincerely,

M.F. Atiyah

M.F. Atiyah

Mrs. P. Bortell, Jr.,
Secretary to Dr. Kaysen,
The Institute for Advanced Study,
Princeton,
New Jersey 08540,
U.S.A.

May 20, 1969

Dear Michael:

Thanks for the improvements in the press release which I welcome. I apologize for the omissions, the product in one case of haste and the other of ignorance. I will clip whatever we get in the way of response, and I think I will send the release to the American offices of the Times, the Guardian, and the Observer. I don't know whether you have any British papers that you would like to do anything about yourself.

You might let me know at your convenience what you want me to do with your first pay check, which is due July 30, and the moving allowance which we had discussed. It can be held for you, deposited to your account here, or forwarded to you in England. If there is anything else in the way of arrangements that you are concerned about, please let me know.

Cordially,

Carl Kaysen

Professor Michael F. Atiyah
Mathematical Institute
24-29 St. Giles
Oxford, England

bcc: Mr. Morgan

M. F. ATIYAH, F.R.S.
Savilian Professor of Geometry

Telephone 54295

UNIVERSITY OF OXFORD

Mathematical Institute
24-29 St Giles
Oxford

13 May 1969

Dear Carl,

Thank you for dealing with the Dupont matter and also for the draft of the press release. I have made a few alterations which I hope you will find acceptable. Only two of the points require any comment I think. In the first place my wife prefers not to be mentioned explicitly. Secondly the references to the Royal Society are added, not because I care particularly about such matters, but because offence might be caused in England by their omission.

As you will see I made only minor changes in your description of my mathematical work. You did very well!

Best wishes.

Yours

Michael.

SENDER'S NAME AND ADDRESS

Professor M.F. Atiyah,

University of Oxford,

Mathematical Institute,

24-29 St. Giles,

Oxford, England.

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The Director,

Institute for Advanced Study,

PRINCETON,

New Jersey 08540,

U.S.A.

University of Oxford,

Mathematical Institute,

24-29 St. Giles,

Oxford, England.

10th March, 1969.

Dear Carl,

In order to give myself a little more time to do various things in Princeton, I have decided to stay one extra night and leave Princeton Wednesday morning, March 26th.   I hope this won't inconvenience you in any way.   I look forward to seeing you.

Best wishes,

Yours,

M.F. Atiyah

The Director,
Institute for Advanced Study,
Princeton,
N.J. 08540,
U.S.A.

March 13, 1969

Professor Michael F. Atiyah
University of Oxford
Mathematical Institute
24-29 St. Giles
Oxford, England

Dear Professor Atiyah:

In checking the correspondence regarding
your visit this month I find that it is not quite
clear whether you are in fact arriving on the 22nd
or "around" that time. Would you be good enough
to let me know your arrival time and indicate
whether we can, perhaps, meet you at Princeton
Airport or be otherwise useful? We are looking
forward to seeing you on the 22nd.

Have a good trip!

Sincerely yours,

Mrs. Paul Bortell, Jr.
Secretary to Dr. Kaysen

M. F. ATIYAH, F.R.S.
Savilian Professor of Geometry

Telephone 54295

UNIVERSITY OF OXFORD

Mathematical Institute
24-29 St Giles
Oxford

30th April

Dear Carl,

Many thanks for your various letters on the visa question. We have now got the forms from the American Embassy & have started the process of filling them in & acquiring the necessary supporting papers.

Concerning my assistant for next year, you will recall that I wanted to have J.L. Dupont of Aarhus University. I discussed the financial question with Deane and, in view of Dupont's Fellowship, we decided that a figure of $4,500 would be appropriate. At least that is my recollection — I don't seem to have anything on paper. I would be grateful if you would write the appropriate letter to Dupont.

I enjoyed my stay in Japan both mathematically & touristically. Many thanks again for your hospitality while I was in Princeton.

Now that the waiver for my visa has gone through I presume that you will be making the press announcement in the near future.

Yours
Michael

February 10, 1969

Dear Michael:

March 22-25 is no problem at all. We will look forward to having you. Please let me know when you are coming in.

There should be no problem about Dupont. We typically pay an assistant at the same rate as we pay a young member. It is true that his salary is taxable, as a member's is not, but this won't make a large amount of difference. When you come, we can decide just what kind of invitation we want to issue to him. As you remember, the matter of appointing an assistant rests with the individual professor and does not have to be discussed by the Faculty. As far as I can see, we would have no problem with his Aarhus fellowship. It is simply a question of what arrangements they would be willing to make, for him to be on leave or to defer taking up the fellowship until his return.

Cordially,

Carl Kaysen

Professor Michael F. Atiyah
University of Oxford
Mathematical Institute
24-29 St. Giles
Oxford, England

UNIVERSITY OF OXFORD

M. F. ATIYAH, F.R.S.
Savilian Professor of Geometry

Mathematical Institute

24-29 St Giles

Telephone 54295

Oxford

5th February, 1969.

Dear Carl,

Thank you for your letter and in particular for your kind
offer to put me up at Olden Farm when I visit Princeton.   In
fact I have now changed my itinerary and propose to visit Princeton
on the way out rather than on the return trip.   This means that
I will probably be in Princeton around March 22nd - 25th.   If
this is still a suitable time from your point of view, I would be
very happy to accept your invitation to stay, but if for any
reason it is inconvenient, I would also be quite happy to stay
on the project.

I don't know if Deane has mentioned the matter to you, but
there is a young Danish mathematician by the name of J. Dupont
whom I would like to have with me next year as my assistant.
Dupont had originally planned to come and spend next year in
Oxford with me, so I think it is only fair to offer him the oppor-
tunity of coming to Princeton instead.   He is a very able young
man, and I have been very impressed with him and with his work.
He is at present at the University of Aarhus.   There are some
administrative financial problems which I thought I should raise
in this connection.   Dupont hopes to be given shortly a 3-year
research fellowship by the University of Aarhus, and I am not
quite sure what the financial and other arrangements would be if
he were to spend a year as an assistant at the Institute.   I am
sure some satisfactory arrangement can be worked out, but I am
rather keen that he should not have to give up this fellowship,
and that he should have something to go back to in Denmark at
the end of his stay in Princeton.

Best wishes,

Yours,

Michael

The Director,
Institute for Advanced Study,
Princeton,
New Jersey 08540,
U.S.A.

January 29, 1969

Dear Michael:

Thanks very much for your note. I think
it is a good idea for you to stop on your way home
from Japan, and we look forward to seeing you when
you come. If you would like to stay with us at Olden
Farm, we would be very happy to have you. However,
if you felt that an apartment in the Project was more
convenient, I will arrange one for you.

I think your suggestion as to what should
be mentioned in the press release is highly appropriate,
and I will include something along these lines.

With warmest regards,

Cordially,

Carl Kaysen

Professor Michael Atiyah
University of Oxford
Mathematical Institute
24/29 St. Giles
Oxford, England

M. F. ATIYAH, F.R.S.
Savilian Professor of Geometry

Telephone 54295

25th Jan. 1969

Dear Carl,

Thank you for your understanding letter of 20th Jan. In the light of these reassurances I am now happy to accept formally the Institute offer. I am, at the same time, notifying the Oxford University authorities of my intention to resign my chair as from 30th September 1969. I intend to remain in Oxford through the summer in order to wind up my affairs, but expect to arrive in Princeton early in September.

You may now go ahead and make the formal announcement of my appointment at any time you wish. You asked me, in an earlier letter, whether there was anything I wanted said in the announcement. I am not quite sure whether you had in mind purely factual information or whether you envisaged also more general comment. In the latter case, and if you thought it

appropriate, I would appreciate some remark
to the effect that I intend to maintain
close links with British mathematics and
to foster Anglo-American cooperation in the
field of mathematics. Although this may sound
slightly pompous it does reflect my sincere
intention. As you know the famous "Brain
Drain" is a matter of acute concern in this
country and I do not want my departure
to appear in a purely negative light.

Now that these formalities are surmounted
we can begin to consider various practical matters
and I think it would be best if I stopped
in Princeton on my way back from Japan in
the latter half of April. I will consult with Deane
on this point.

Yours Sincerely,

Michael Atiyah.

THE INSTITUTE FOR ADVANCED STUDY

PRINCETON, NEW JERSEY 08540

Telephone-609-924-4400

THE DIRECTOR

December 31, 1968

To the Members of the Board of Trustees

Gentlemen:

I wish to recommend the appointment of Professor Michael Atiyah, Savilian Professor of Geometry at Oxford University, as professor in the School of Mathematics at the Institute, effective 1 July, 1969. This appointment fills the vacancy created by the resignation of Professor Lars Hörmander last year. Atiyah is a young man, and although he is not so young as Hörmander, his appointment does improve the age distribution in Mathematics. As you will remember, this is a matter of some concern. We are proposing to make at least one, and perhaps two, more appointments of younger men in Mathematics in the course of the next several years, in advance of forthcoming retirements, in order to improve this age distribution.

The Faculty of the School of Mathematics was enthusiastic and unanimous in its recommendation of Atiyah, and the Faculty of the other Schools concurred in this recommendation without objection. I attach an appreciation of Atiyah's work by Armand Borel and a comment on his work by Professor Don C. Spencer of the Department of Mathematics at Princeton University. As Spencer himself writes, it is difficult for any other man to comment on Atiyah's work.

Professor Atiyah has signified his interest in coming to the Institute if invited. I consider it extremely important to have him and would wish for as speedy a response on your part as is convenient. I shall be glad to answer any questions; please call if there are any.

Please return the enclosed ballot as soon as convenient.

Carl Kaysen

Enclosures

THE INSTITUTE FOR ADVANCED STUDY

PRINCETON, NEW JERSEY 08540

THE DIRECTOR

January 10, 1969

Memorandum for the Record

  Mr. Garrison's secretary informed us
by telephone today that the ballot on Atiyah
arrived in Mr. Garrison's absence. He is in
India until February 22, and because he is on
the move constantly, it is impossible to forward
his mail with any assurance of its reaching him.

  In view of this situation, Dr. Kaysen
will proceed on the election of Atiyah without
Mr. Garrison's vote.

       Ruth Bortell

P.S. Mr. Schur telephoned his approval; written
ballot not yet sent because he has been ill.

      REB

VOTE SHEET

In the matter of offering a professorship in the School of Mathematics
to Michael Atiyah, I

approve ☒

disapprove ☐

Comment:

Signed *W. Hochschild*

Date

merely symbolic of zio legal effect

Please return to: Director's Office
Institute for Advanced Study
Princeton, New Jersey 08540

January 10, 1969

Dear Deane:

      The Trustees have now voted affirma-
tively on Atiyah's appointment, and I have
written him a formal letter of appointment,
copy of which is enclosed.

                  Cordially,

                  Carl Kaysen

Professor Deane Montgomery
Institute for Advanced Study

Enclosure

Sender's name and address:

M. F. Atiyah
Shotover Mound
Headington
Oxford

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OR SENT BY ORDINARY MAIL.

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24 DEC
1968
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Dr. Carl Kaysen,
Director
Institute for Advanced Study
PRINCETON
N.J. 08540
U.S.A.

Harton Mound
Headington
Oxford
24 December 1968

Dear Carl,

Thank you for your letter answering my various questions.

From what you say I hope that the formalities of my appointment can be got through by mid-January.

Before I actually tender my resignation here in Oxford I would like to have some official assurance that I (and my family) will obtain our visas. I hope therefore that there will be no undue delay from this quarter. Various items in the press, describing the back-log caused by the new immigration laws, have rather worried my wife. Incidentally, in case it is relevant, perhaps I should point out that my wife once had an immigrant visa (1955-57) but allowed it to lapse on our return to England.

Concerning houses, thank you for reserving the former Gell-Mann house. We would of course prefer something a little closer to the Institute & somewhat larger, if anything became available. Dare I ask about the disposition of the Hermann Weyl house? Anyway there is plenty of time between now & September.

I have already mentioned to Deane the possibility of a young Dane, called Dupont, coming

as my Assistant. Perhaps
I will write to you
formally about him in
due course.

Best wishes for the New Year

Yours Sincerely,

Michael

<u>10.45 a.m.</u>

oned and can only be reached

: number, or shall I place

last year
10, 8, 4

2 boys

M. F. ATIYAH, F.R.S.
Savilian Professor of Geometry

Telephone 54295

UNIVERSITY OF OXFORD

Mathematical Institute
24-29 St Giles
Oxford

3 December 1968

Dear Kaysen,

You should by now have received my telegram accepting the Institute offer. This letter is to confirm that and to discuss the various matters that arise. Perhaps I should say, first of all, that I am very sorry to have taken so long in making my decision. I appreciated your patience in allowing me to think it over for so long, and now that I have taken the decision I shall come to the Institute with every expectation of enjoying it and making a success of things.

Turning now to administrative questions, the first point is presumably to await confirmation of my appointment by the Trustees. Perhaps you could let me know when to expect this. Until it comes through I cannot hand in my official resignation here. On the other hand I hope this can be arranged fairly quickly so that proceedings to find my successor in Oxford can be started soon. The second administrative point concerns my visa. I gather you have

practical things for this, and I will naturally feel relieved when this formal hurdle is surmounted. Incidentally, until my appointment is official, I hope you will try to keep the question reasonably confidential although I have no objection to your informing Alan Bullock if he is still around in Princeton.

I presume that your normal procedure would be to make my appointment effective from 1 July 196[ ] even though I may not turn up before August or September. Again, normal procedure here would be for me to resign from 30 Sept 1969, though I could of course resign from 1 July.

When we discussed matters in Princeton you did indicate that the Institute would be prepared to assist me financially with the burden of moving my family & belongings across the Atlantic next summer. Perhaps we could take this up again in due course.

Finally there is the vexed question of housing. Here the matter is somewhat simplified because we have now decided not to buy or build for a year or two. We shall therefore want to rent an Institute house if something

M. F. ATIYAH, F.R.S.
Savilian Professor of Geometry

Telephone 54295

UNIVERSITY OF OXFORD

Mathematical Institute
24-29 St Giles
Oxford

suitable is available. I thought perhaps that
you could ask Mr. Morgan, who has been
so helpful to us before, to write to me
on this question.

On mathematical, and other related
questions, I will be writing to Deane. It may
be that, sometime, it would be convenient for
me to come to Princeton to discuss various points.
I think this can be left open for the
present until we see how things develop —
I am always against unnecessary travel.

As you know I have found this a
difficult decision. It was not made any
easier when the Queen (i.e. the Royal Society) decided
to give me a medal last week. Anyway I
felt it was hardly decent to write to you
until the various ceremonies were over. Actually
I felt better when I found that Dyson was
also there getting a medal. It showed that
migration to the Institute didn't entail automatic

excommunication!

I look forward to returning to Princeton.

Yours sincerely,

Michael Atiyah

P.S. Please mark your correspondence with me as confidential for the time being.

December 9, 1968

CONFIDENTIAL

Dear Michael:

Let me answer the questions you raised in your letter of 3 December seriatim.

First, as to the matter of the formalities of the appointment. I estimate that these can all go through within a month. I will try to do it more quickly if I can, but this may be difficult. In any event, I agree with you that the matter should be kept quiet until then, and we will say nothing here publicly, although as you know, gossip spreads.

Second, on your visa, you need an immigrant visa, and we will go to work on it immediately. If it turns out that any further information is needed from your side, I will be in touch with you.

Third, on the question of resignation date, I think that is a matter for you. Our appointment would run from 1 July.

I will take up the question of costs of movement with you a little later when we are more definite on your schedule and the like.

Finally, as to housing, which as you say is a difficult question. We will reserve for you as a minimum a house somewhat larger than you had when you were here as a visitor, which is a little further down Mercer Road. It is the house which Gell-Mann occupied; has three bedrooms and a study and is rather better fitted out and furnished than the one you were in. It also has a sizeable outdoor area attached to it. We would, of course, hope to do better, and Mr. Morgan will be looking in the market for something you might rent and will be in touch with you directly should anything be available. I think you are wise to proceed by renting first, but we will apprise you of any sudden appearance in the market of an exceptionally good and suitable house.

You should, of course, write to Deane or your other colleagues about any academic matters. In particular they may wish

to communicate with you their thoughts on appointments under con-
sideration and seek your comments, but this is a matter I think for
them rather than for me.

I can appreciate how difficult this radical decision
must have been for you and your family, and I can only say that we
all hope to do everything we can to make you welcome and at home
here.

With warmest regards,

Sincerely yours,

Carl Kaysen

Professor Michael Atiyah
University of Oxford
Mathematical Institute
24/29 St. Giles
Oxford, England

October 16, 1968

Dear Michael:

I write to let you know that the Board
of Trustees of the Institute has voted formally to
raise professorial salaries to $35,000 a year
beginning with the next academic year, from 1 July,
1969. André was of the view that there was no
evidence that you positively disliked money, and
therefore thought that there could be no harm in
letting you know.

With best wishes,

Cordially,

Carl Kaysen

Professor Michael Atiyah
University of Oxford
Mathematical Institute
24/29 St. Giles
Oxford, England

December 31, 1968

To the Members of the Board of Trustees

Gentlemen:

I wish to recommend the appointment of Professor Michael
Atiyah, Savilian Professor of Geometry at Oxford University, as
professor in the School of Mathematics at the Institute, effective
1 July, 1969. This appointment fills the vacancy created by the
resignation of Professor Lars Hörmander last year. Atiyah is a
young man, and although he is not so young as Hörmander, his appoint-
ment does improve the age distribution in Mathematics. As you will
remember, this is a matter of some concern. We are proposing to
make at least one, and perhaps two, more appointments of younger men
in Mathematics in the course of the next several years, in advanced
of forthcoming retirements, in order to improve this age distribution.

The Faculty of the School of Mathematics was enthusiastic
and unanimous in its recommendation of Atiyah, and the Faculty of the
other Schools concurred in this recommendation without objection. I
attach an appreciation of Atiyah's work by Armand Borel and a comment
on his work by Professor Don C. Spencer of the Department of Mathe-
matics at Princeton University. As Spencer himself writes, it is
difficult for any other man to comment on Atiyah's work.

Professor Atiyah has signified his interest in coming to
the Institute if invited. I consider it extremely important to have
him and would wish for as speedy a response on your part as is con-
venient. I shall be glad to answer any questions; please call if
there are any.

Please return the enclosed ballot as soon as convenient.

Carl Kaysen

Enclosures

December 31, 1968

Dear Julian:

— follow for Atiyah

    I am sending this along to your rather
pro forma in that your resignation has not been
disclosed yet. I suppose there will be no harm
in your marking it.

        Cordially,

        Carl Kaysen

Dr. Julian Boyd
Princeton University Library
Princeton, New Jersey 08540

THE INSTITUTE FOR ADVANCED STUDY

PRINCETON, NEW JERSEY 08540

Telephone-609-924-4400

THE DIRECTOR

December 31, 1968

To the Members of the Board of Trustees

Gentlemen:

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Atiyah, Savilian Professor of Geometry at Oxford University, as
professor in the School of Mathematics at the Institute, effective
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the Institute if invited. I consider it extremely important to have
him and would wish for as speedy a response on your part as is con-
venient. I shall be glad to answer any questions; please call if
there are any.

Please return the enclosed ballot as soon as convenient.

Carl Kaysen

Enclosures

VOTE SHEET

In the matter of offering a professorship in the School of Mathematics
to Michael Atiyah, I

approve ☐

disapprove ☐

Comment:

Signed _____

Date _____

Please return to: Director's Office
Institute for Advanced Study
Princeton, New Jersey 08540

TELEGRAM RECEIVED - DECEMBER 3, 1968

Oxford, England

                    Accepting invitation offer. Letter follows.

                              Atiyah

Reply telegram - Dec. 3 : Prof. Michael Atiyah, Univ. of Oxford., Math. Inst.,
24-29 St. Giles, Oxford
                    Delighted. My letter will respond to yours.

                              Carl Kaysen

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KAYSEN DIRECTOR INSTITUTE FOR ADVANCED STUDY

PRINCETON-NEWJERSEY

ACCEPTING INSTITUTE OFFER LETTER FOLLOWS

    ATIYAH

NNNN

COPY MAILED TO MATH. FACULTY
    Dec. 5, 1968

924-4400

TELEPHONE No.

TELEPHONED TO   Sec,

TIME 2:16 P.M.

BY BW

ATTEMPTS
TO
DELIVER

SF1201 (R2-65)

M. F. ATIYAH, F.R.S.
Savilian Professor of Geometry

Telephone 54295

UNIVERSITY OF OXFORD

Mathematical Institute

24-29 St Giles

Oxford

26 May 1968

Dear Kaysen,
          Many thanks for your letter with the news of
the various financial changes at the Institute. Without
wishing to commit myself in any way I think it is safe to
say that the chances of my coming to Princeton have not been
diminished by the financial improvements you mentioned !

     We have just about settled down now after the upheaval
of travel and readjustment. Oxford has its points, but the
wheather this past month has not been one of them.

     If your projected conference in Sussex does come off I
hope you will find time to fit in a short trip to Oxford.
I would be delighted to entertain you, and to hear the latest
developments of the Presidential scene.

                          Yours,

May 17, 1968

Dear Deane:

I have written to
Atiyah this morning in the sense
of our conversation yesterday and
hope that this will help push him
in the right direction.

Cordially,

Carl Kaysen

Professor Deane Montgomery
Institute for Advanced Study

May 17, 1968

Professor Michael Atiyah
University of Oxford
Mathematical Institute
24/29 St. Giles
Oxford, England

Dear Atiyah:

Deane Montgomery tells me he chatted with you in
Paris recently and informed you that I had raised the question
of the future level of faculty salaries at the most recent
meeting of our Board of Trustees. Without wishing to attribute
to you more than a healthy curiosity about these matters, I can
say as a result of that discussion that our professional salaries
will be increased to $35,000 for the academic year beginning
July 1, 1969. Clearly, this is still a prediction and not an
accomplished fact, but it is a prediction on which I believe
you can rely.

I am sure Deane did tell you about the two changes
in compensation arrangements that were voted by the Trustees -
namely, (1) the travel allowance has been raised from $1,000
to $1,500 with unspent balances continuing to be available for
up to three years; (2) provision has been made for a "Sabbatical
year" with every professor entitled to a full year off at half
pay, or half a year off at full pay for the half year, every
sixth year.

I trust this will help you in the process of making
your choice, in what we all think will be the right way.

Cordially,

Carl Kaysen

THE INSTITUTE FOR ADVANCED STUDY

PRINCETON, NEW JERSEY 08540

SCHOOL OF MATHEMATICS

February 26, 1968

Faculty in Mathematics
Institute for Advanced Study

Dear Colleagues:

In accordance with our agreement I have told
Atiyah that we don't wish to impose a definite time
limit on his decision, but that it would be more
helpful and convenient if he could let us know by
November 15 rather than later.

Sincerely yours,
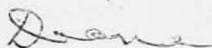
Deane Montgomery

DMcdu
CC: Dr. Kaysen

May 17, 1968

Professor Michael Atiyah
University of Oxford
Mathematical Institute
24/29 St. Giles
Oxford, England

Dear Atiyah:

        Deane Montgomery tells me he chatted with
you in Paris recently and informed you of my discussion
at the most recent meeting of our Board of Trustees of
the future of faculty salaries at the Institute. As a
result of that discussion I am prepared to say in con-
fidence that there is a high probability that the
salaries will be increased to $35,000 for the academic
year beginning July 1, 1969. Clearly, this is still a
prediction and not an accomplished fact, but it is a
prediction in which I have a high degree of confidence.

        I am sure Deane did tell you about the two
changes in compensation arrangements that were voted
by the Trustees - namely - (1) the travel allowance has
been raised from $1,000 to $1,500 with unspent balances
continuing to be available for up to three years; (2)
provision has been made for a "Sabbatical year" with
every professor entitled to a full year off at half pay,
or half a year off at full pay for the half year, every
sixth year.

        I trust this will help you in the process of
making your choice.

                              Cordially,

                              Carl Kaysen

bcc: Professor Montgomery

THE INSTITUTE FOR ADVANCED STUDY

PRINCETON, NEW JERSEY 08540

Telephone-609-924-4400

THE DIRECTOR

December 13, 1968

MEMORANDUM TO THE FACULTY in the

SCHOOL OF MATHEMATICS

     Attached is what has been circulated to the rest of
the Faculty today. I do not anticipate any questions, and I
am reasonably confident of the action of the Trustees. I have
already notified Atiyah that the formalities would take some-
thing like a month, and I think that this is a realistic estimate,
although it may be as late as the middle of January before all
the Trustees respond to a mail vote.

CK

Carl Kaysen

Professors Beurling, Borel, Gödel, Harish-Chandra, Montgomery,
     Selberg, Weil, Whitney

THE INSTITUTE FOR ADVANCED STUDY

PRINCETON, NEW JERSEY 08540

Telephone-609-924-4400

THE DIRECTOR

December 13, 1968

Dear Colleague,

The Faculty of the School of Mathematics proposes to nominate Michael Atiyah, Savilian Professor of Geometry at Oxford University, for a Professorship in the Institute. The Faculty was unanimous and enthusiastic in its recommendation. Atiyah has shown an interest in coming, if invited.

I attach a dossier on Atiyah which contains an appreciation of his work by Professor Borel, a bibliography, and a letter on him by Professor Donald C. Spencer of Princeton University. In view of Atiyah's stature it did not seem necessary to secure more letters.

If you have any comments or questions concerning the suitability of this nomination or the advisability of my recommending it to the Trustees, would you please communicate with me at your earliest convenience.

I am writing to each Professor in the Schools of Historical Studies and Natural Sciences. If there are no unresolved questions by the end of this month, I shall forward the nomination to the Trustees.

Cordially yours,
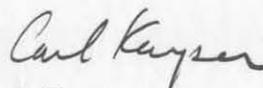
Carl Kaysen

Carl Kaysen

<u>Michael Francis Atiyah</u>

Born on April 22, 1929 in London

B.A. in 1952 and Ph.D. in 1955 from Trinity College, Cambridge

Assistant Lecturer at Trinity College (1957-59), University Lecturer at
    Pembroke College, Cambridge (1960-61), Reader and then Savilian
    Professor of Geometry at Oxford University (1961 to present)

IAS memberships: academic year 1955-56, Fall terms 1956 and 1959,
    academic year 1967-68

Co-recipient of the Fields Medal at the International Congress of
    Mathematicians, Moscow, 1966.

****

        During the last twenty years or so, mathematics has been under-
going a number of radical changes, which have affected even some of its
most classical parts, and a vast expansion. Although it seems by now well
nigh impossible for anyone to master the whole field, this has resulted not
in a fragmentation, but on the contrary in a deeper unification of mathe-
matics. Repeatedly, boundaries between two traditionally distinct areas
have become blurred under the impact of new, often more abstract, points
of view, and been replaced by connections which led to decisive progress
in one or both fields. A most, if not the most, striking example of this
phenomenon during the last decade is the Atiyah-Singer index theorem, which
bridges in a deep way algebraic topology and the theory of elliptic systems
of partial differential equations. This, and the subsequent Atiyah-Bott
fixed point theorem, which belongs to the same borderline area, are probably
Atiyah's most spectacular achievements, and at any rate those which have
attracted the widest attention. However, they were preceded by an already
abundant and brilliant work, to which they are closely connected, and which
has been influential in other directions as well.

        M. Atiyah's contributions to mathematics pertain mainly to
algebraic geometry, algebraic and differential topology, and global analysis.
They can be divided chronologically roughly into three parts, the second of
which put him in the forefront of topology, and the third of which, alluded
to above, brought him to the forefront of mathematics. Although the first
one contains some substantial contributions to classical algebraic geometry,
and is far from negligible in the overall evaluation of Atiyah's, I shall
concentrate here on the second and third ones. Both trace their origin to
the Riemann-Roch theorem; in fact, they may be viewed in part as far reaching
generalizations of it, in the context of topology and of analysis respec-
tively, so that, in order to put Atiyah's work into proper perspective, it
seems necessary to give a capsule description of its recent history. Classic-
ally, the century-old Riemann-Roch theorem yields a formula expressing in
terms of essentially geometric data an analytical invariant (the number of
linearly independent meromorphic functions on a compact Riemann surface whose
zeros and poles verify certain conditions). This is a central result, and

its extension to higher dimensional projective varieties was a long out-
standing problem. After much spade work by various people, in particular
Serre, Spencer, Kodaira, a first solution was given by Hirzebruch. His
formula states the equality of two numbers associated to a holomorphic
vector bundle on a projective manifold of apparently quite different nature;
one is an integer whose definition is essentially analytical, the other
one is computed from geometrical or topological data. The latter one is
by definition a rational number, and the mere fact that it is an integer
is in itself remarkable. Related rational numbers were then introduced in
the more general context of differentiable manifolds, and were also shown
to be integers. Hirzebruch's proof of the Riemann-Roch theorem relies heavily
on algebraic topology, and this prevented its extension to algebraic varieties
over fields of non-zero characteristic, i.e. to "abstract" algebraic geometry.
Later, however, Grothendieck proved in an entirely different manner a much
more general result, valid in the abstract case but also completely new in
the classical one. It is at this point that Atiyah enters the picture.
Using Bott's periodicity theorem, he first gave a beautiful new proof of
one of the topological integrality theorems mentioned above. Then, he and
Hirzebruch, starting from his idea, transposed the whole Grothendieck ap-
proach to differential topology. This led them to a number of brilliant
papers with a wide range of applications; to homotopy, algebraic topology,
algebraic and analytic geometry. They also introduced in topology some
completely new concepts: starting from vector bundles, they attached to a
space new groups, related to cohomology groups, formally similar to them
in many respects, but more powerful in many instances. This gave the first
significant example of an "extraordinary cohomology theory," the so-called
K-theory, and deeply influenced the subsequent development of topology.
K-theory also turned out to be a key tool to relate topology and analysis
in the next phase of Atiyah's work.

In the Hirzebruch formula, the analytical side can be viewed as
the index of an elliptic system (i.e. the difference between the dimen-
sions of the space of zeros of the system and of its adjoint). However,
no such interpretation was available in the more general case where the
analogue of the topological side had been proved to be an integer. Atiyah
and Singer noticed first that (under a mild condition) it was possible to
introduce on a manifold a generalization of Dirac's equation, whose index
was a likely candidate for the analytic interpretation of one such number.
At about the same time, Gelfand pointed out that the index of an elliptic
system is invariant under deformations, and should therefore be expressible
in terms of topological data. This appeared, however, as a rather formid-
able program. With amazing drive and speed, Atiyah and Singer were able
to show within a few months that this was indeed the case. The proof of
their theorem, modelled after Hirzebruch's argument, is very long and is
a truly remarkable blend of analytical methods used by Russian mathematicians
in some special cases (mainly, singular integral operators) and of topo-
logical methods (generalized cobordism theories). After this breakthrough,
with characteristic drive, Atiyah pushed this research further in several
directions and obtained in particular: an index theorem for manifolds with
boundary (with Bott and Singer), a new proof of the index theorem closer
to Grothendieck's approach to the Riemann-Roch theorem (with Singer) and an
extension to systems on which a compact Lie group acts, where the index is
related to the representations of the group (with a student of his, G. B.
Segal).

A further similar and also very remarkable connection between topology and analysis was supplied slightly later by the Atiyah-Bott fixed point theorem. It concerns a transformation with isolated fixed points of a compact manifold acting on a complex of elliptic operators, and expresses a global invariant in terms of the behaviour of the transformation around the fixed points. This theorem, which is a wide generalization of the classical Lefschetz fixed point theorem, has already had numerous applications in various areas.

I hope that the necessarily incomplete above sketch gives some idea of Atiyah's bold, and at the same time systematic, progression from classical algebraic geometry to a commanding position in a vast, central and extremely active area of mathematics. His work is remarkable by its elegance, power, conceptual clarity, however involved the technical details may be, and the abundance of results and ideas. Equally striking are Atiyah's keen insights into the structures of the mathematical theories involved and his ability to find the right setting for a problem, to introduce new ways to look at it, which open up new directions. The greater part of his work has been done jointly with various mathematicians. To anyone who is familiar with his ebullient imagination and truly exceptional drive, this testifies to his eagerness to discuss mathematics, explore new territories and share his ideas, rather than to a lack of initiative. Whatever the reason behind his apparent need for collaborators, it would in fact be an asset for the Institute, where Atiyah would undoubtedly create much activity and attract many people. Being also a brilliant expositor, he is ideally suited to contribute to and benefit from the life of an active mathematical center such as Princeton, and we could confidently expect him to pursue here a fruitful and influential career.

A. Borel

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PRINCETON UNIVERSITY

PRINCETON, NEW JERSEY

Department of
MATHEMATICS

December 9, 1968

Address reply to
FINE HALL
BOX 708
PRINCETON, N.J.

Professor D. Montgomery
Institute for Advanced Study
Princeton, N. J.

Dear Deane:

M. F. Atiyah's work lies at the center of modern mathematical development and its influence is as great as that of any other living mathematician. Therefore it seems presumptious of me to try to write about it. Moreover, the same remarks can be made about Atiyah's personal influence, and I know of no mathematician whose presence on a mathematical faculty would add more to it than his. Therefore I shall confine my remarks to recalling briefly some facts about Atiyah's career, as I remember them.

I have known Atiyah since 1955, but I had become aware of his work somewhat earlier — his reputation in fact began to spread while he was still a student of W. V. D. Hodge in Cambridge, England. He received the Smith and Raleigh Prize in 1954, for example, for a paper entitled "New methods in the theory of algebraic varieties," in which he made substantial contributions to the classification of complex analytic bundles over curves (this work is elaborated in his papers in the Proc. London Math. Soc., vol. 5 (1955), pp. 407-434, vol. 7 (1957), pp. 414-452).

Atiyah went to the Institute for Advanced Study in 1956, and there began shortly afterward the development with F. E. P. Hirzebruch of K-theory, which had its origin in A. Grothendieck's proof (and generalization) of Hirzebruch's Riemann-Roch theorem for algebraic manifolds. The key theorem in this development is the periodicity theorem of R. Bott which was brilliantly exploited by Atiyah and Hirzebruch. Today K-theory is an important component of algebraic topology, and its formalism is extending into algebra and number theory (recent work of Bass, Milnor and Serre, for example).

To make a long story short, at the expense of ignoring important mathematical results along the way, we remark next that the development of K-theory, in which Atiyah played such a central role, was followed by the index theorem of Atiyah and I. M. Singer which is a generalization, to arbitrary elliptic (linear) operators on compact differentiable manifolds, of the Riemann-Roch theorem, and it finds its best expression in terms of K-theory. As a corollary of the index theorem, the Riemann-Roch theorem is shown to be valid for arbitrary compact complex analytic manifolds — a fact which, in the case of complex dimension 2, has led to new results in the classification of compact analytic surfaces, as shown by K. Kodaira.

Professor D. Montgomery   -2-   December 9, 1968

These developments, springing from the Riemann-Roch theorem, have a quality of cohesion and beauty which is revealed even by a superficial examination of the results, and have enriched the fields of topology, partial differential equations and algebra.

Atiyah was a co-recipient (with P. J. Cohen, A. Grothendieck, and S. Smale) of the Fields Medal awarded at the International Congress of Mathematicians, Moscow, 1966, as you know.

Yours sincerely,

Don Spencer

DCS:vn   D. C. Spencer.

THE INSTITUTE FOR ADVANCED STUDY

PRINCETON, NEW JERSEY 08540

Telephone-609-924-4400

THE DIRECTOR

December 31, 1968

To the Members of the Board of Trustees

Gentlemen:

I wish to recommend the appointment of Professor Michael Atiyah, Savilian Professor of Geometry at Oxford University, as professor in the School of Mathematics at the Institute, effective 1 July, 1969. This appointment fills the vacancy created by the resignation of Professor Lars Hörmander last year. Atiyah is a young man, and although he is not so young as Hörmander, his appointment does improve the age distribution in Mathematics. As you will remember, this is a matter of some concern. We are proposing to make at least one, and perhaps two, more appointments of younger men in Mathematics in the course of the next several years, in advance of forthcoming retirements, in order to improve this age distribution.

The Faculty of the School of Mathematics was enthusiastic and unanimous in its recommendation of Atiyah, and the Faculty of the other Schools concurred in this recommendation without objection. I attach an appreciation of Atiyah's work by Armand Borel and a comment on his work by Professor Don C. Spencer of the Department of Mathematics at Princeton University. As Spencer himself writes, it is difficult for any other man to comment on Atiyah's work.

Professor Atiyah has signified his interest in coming to the Institute if invited. I consider it extremely important to have him and would wish for as speedy a response on your part as is convenient. I shall be glad to answer any questions; please call if there are any.

Please return the enclosed ballot as soon as convenient.

Carl Kaysen

Enclosures

6/12/70

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Books

1. Introduction to Commutative Algebra (joint with I.G. Macdonald), Addison-Wesley 1969.

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M. F. Atiyah

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