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Record Group/Collection: George H.W. Bush Presidential Records
Collection/Office of Origin: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Global Climate Change Files

OA/ID Number: 62048
Folder ID Number: 62048-007

Folder Title:
Environment: General [1 of 6] [1992]

Stack:

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Section:

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Position:

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"Document Control"

TYPE: INFORMATION

DOCUMENT NUMBER: 9203628

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: REILLY, William K.: ENVIRONMENTAL PROTECTION AGENCY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 12/14/92

SUBJECT: HE IS FORWARDING A COPY OF THEIR NEW PUBLICATION
"THE CLIMATE IS RIGHT FOR ACTION".

DIRECTORATE
ASSIGNED:

STAFF
ASSIGNED:

ACTION
REQUIRED:

STAFF
ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE:
DATE COMPLETED:

STAFF DUE DATE
DATE COMPLETED/DEPT:

COPIES TO: ENVIRONMENT
D. Allan Bromley

WHITE HOUSE TRACKING #:

CONTACT PERSON:
PHONE:

EXT:

REMARKS: ENCLOSURES TO DAB.

OSTP RECEIVED: 12/18/92
FILE: P-ENVIRONMENT

DEPT RECEIVED:

CENTRAL FILES:



The Administrator
Washington, D.C. 20460

DEC 14 1992

The Honorable Allan Bromley
Assistant to the President and Director
Office of Science and Technology Policy
358 Old Executive Office Building
Washington, DC 20506

Dear Allan:

I am enclosing the new EPA publication on our voluntary programs, The Climate is Right for Action. Prompted by our work on voluntary initiatives and the signing of the June 1992 Framework Convention on Climate Change, the book enumerates many opportunities now at hand to act on the nation's commitment to reduce greenhouse gas emissions.

With this publication, I am inviting companies from all industrial sectors and regions of the country to join us in these programs. I hope you find it helpful.

Sincerely yours,

William K. Reilly

United States
Environmental Protection
Agency

ANR
Station



The Climate is Changing. Action Voluntary Program to Reduce Greenhouse Gas Emissions



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at least 50% recycled fiber

TYPE: ACTION
ORIGINATOR: 02

DOCUMENT NUMBER: 9203580
DIRECTORATE STATUS

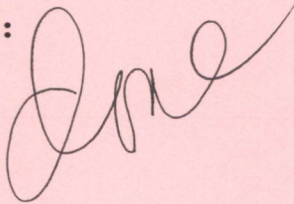
STATUS I

FROM: SCHROTE, John: U.S. DEPARTMENT OF THE INTERIOR

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 12/08/92

SUBJECT: HE IS WRITING REGARDING RICHARD MORGENSTERN'S LETTER
CONCERNING THE VIEWS EXPRESSED IN THE U.S. CLIMATE
CHANGE NATIONAL ACTION PLAN MEETING.

DIRECTORATE STAFF
ASSIGNED: ENVIRONMENT ASSIGNED: 

ACTION STAFF
REQUIRED: AS NECESSARY ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 12/28/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT: 12/9/92

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: *See attached letter to Morgenstern.* PHONE: EXT:

OSTP RECEIVED: 12/14/92
FILE: P-ENVIRONMENT

DEPT RECEIVED:

CENTRAL FILES:



THE WHITE HOUSE
WASHINGTON

December 9, 1992

Dear Dr. Morgenstern:

Upon my return from a meeting of the Science Advisors of the G-7 countries in Paris this week, I received your letter of December 4, 1992 regarding the US Climate Change National Action Plan, and would like to make a few brief comments for the record. To begin with, I must conclude that your comments constitute a personal view of the Plan, because this Plan has been produced in response to specific commitments made by both President Bush and EPA Administrator Reilly at UNCED in June. Indeed, it was EPA Administrator Reilly who announced, on behalf of the US, the series of activities to facilitate a "Prompt Start" of the climate change convention as a vital first step in addressing greenhouse gas emissions reduction, and completion of the US National Action Plan by January 1, 1993 was one of the steps in that six-step plan.

To help move the implementation phase of the Convention forward, the United States is providing this plan to the INC meetings this week to aid in discussions in the Convention process, while it is, at the same time, under review in our own country through the Federal Register process. As we have stated, the Plan represents only the first iteration in a series of regular reports. However, the Plan, imperfect as it may be at this stage, is the result of a great deal of very hard work by many, dedicated individuals in the different government agencies who have been laboring very hard to meet the President's and Administrator Reilly's stated commitments and to provide the negotiations with useful material to help move the convention process forward at an accelerated rate.

I continue to hold a great respect for the interagency processes which have produced this report and which have provided a vehicle for full and open review by all interested government agencies. In fact, you were part of the full and open discussion of the issues on December 2, 1992 by the US policy review group set up by President Bush in 1989 here in the White House for climate change issues, the Global Change Strategy Task Force. In that meeting, ten federal agencies voted to provide the US National Action Plan to the Intergovernmental Negotiating Committee (INC) for discussion at this week's INC meetings, while, at the same, distributing the Plan for review here in the US through the Federal Register process. You, on behalf of the Environmental Protection Agency, were the one vote against this action - against fulfilling an international commitment made by the President as well as by your own Administrator (and, as I have subsequently discovered, against the stated position of your Administrator on this issue).

In addition, I also feel that widely circulating a letter which is inaccurate and deliberately misleading such as yours of December 4, just prior to a major international meeting where the US is attempting to provide practical and useful information to a discussion of a crucial environmental issue like greenhouse gas emissions reduction, is by no means a service to the country or to the environment.

As we move from one Administration to another over the next month, President Bush and the other members of this Administration remain committed to continuing to take whatever concrete steps are possible to accelerate the most expeditious implementation of the climate change convention in order to reduce worldwide greenhouse gas emissions. In the short time left in this Administration, I sincerely hope you will join us in this very important effort.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "D. Allan Bromley". The signature is fluid and cursive, with the first name "D. Allan" and last name "Bromley" clearly distinguishable.

D. Allan Bromley
The Assistant to the President
for
Science and Technology

Dr. Richard Morgenstern
Acting Assistant Administrator
Office of Policy Planning and Evaluation
Environmental Protection Agency
Washington, D.C. 20460



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

December 8, 1992

3580
TAKE
PRIDE IN
AMERICA

Dr. Allan Bromley
Assistant to the President
for Science and Technology
Room 358 Old Executive Office Building
Washington, D.C. 20500

Dear Dr. Bromley:

This letter responds to the December 3 letter to you from Richard D. Mogenstern, Acting Assistant Administrator, Office of Policy, Planning and Evaluation, of the Environmental Protection Agency, which urges you to reverse the decision of "the Bromley Group" to distribute the U.S. Climate Change National Action Plan (USNAP) at next week's meeting of the International Negotiating Committee (INC) for a Framework Convention on Climate Change.

Please be informed that the Department of the Interior most strongly opposes EPA's suggestion. The decision of the interagency group, chaired by you, to go forward with distribution of the USNAP at the INC meeting was made after full and careful consideration of all relevant factors and vigorous debate. EPA was the only agency opposed to the final decision. We are concerned that their communication may discredit the interagency process.

In our opinion, the EPA letter contains a variety of misstatements and misleading inferences, to which our response is as follows:

First: It is not true, as EPA contends, that the USNAP does not satisfy the requirements of Article 4 of the United Nations Framework Convention on Climate Change (Convention). The EPA letter implies that the Convention somehow obligates the United States to return its year-2000 net greenhouse gas emissions levels to their 1990 levels, as distinguished from aiming at such result in light of national circumstances. As you know, and as the Senate explicitly recognized when it ratified the Convention, there is a critical distinction between "aiming" at 1990 levels and being obligated to achieve that result. As the Senate Committee on Foreign Relations stated in its formal report on the Convention: "This aim [of returning emissions to their 1990 levels] is in the reporting section of article 4.2 and is not legally binding."

EPA is wrong when it asserts that the USNAP "does not convey any sense that the aim of such policies [i.e., those described in the USNAP] is to return U.S. emissions to their 1990 levels." A fair reading of the USNAP does not support EPA's view. The Introduction, under the sub-caption "Mitigation" on

page 4, contains the unequivocal statement: "The United States is pursuing numerous actions to mitigate the risk of potential climate change by limiting net greenhouse gas emissions." It then summarizes the estimated effects of those actions in limiting greenhouse gas emissions and shows that we are doing an excellent job in "aiming" at a return to 1990 levels in the year 2000, namely, net emissions "of only 1.4 to 6 percent above 1990 levels." The 32-page section on Mitigation Actions cannot be read as anything other than a serious attempt to reduce net U.S. greenhouse gas emissions by the year 2000, with the comparison to 1990 being very much in mind.

One of the problems with the EPA approach is that, when it recites the provisions of Convention Article 4.2(b), concerning the reporting requirement of nations such as the United States, it conveniently omitted key words of the Convention. The EPA letter describes the requirement as being to communicate "detailed information on its policies and measures . . . with the aim of returning" emissions to their 1990 levels. The eclipses obscured the fact that the missing words described the policies and measures that are to be the subject of the report, namely, "policies and measures referred to in subparagraph (a) above." That is a curious omission, since subparagraph (a) is the part of the commitments provisions that specifically provides for "taking into account the differences in these Parties' starting points and approaches, economic structures and resource bases, the need to maintain strong and sustainable economic growth, available technologies and other individual circumstances,"

EPA's failure to quote accurately the reporting requirement may account for the emphasis in its letter on the "aim" of returning year-2000 emissions levels to 1990 levels without acknowledging that the "aim" is in light of the national circumstances expressly provided for in the Convention text.

With the full provisions of the reporting requirement in mind, it is clear that EPA also is wrong when it states that "nowhere does the Plan describe why U.S. commitments fall short of the aim of Article 4 and what the U.S. intends to do about it." The EPA statement ignores the fact that the "aim of Article 4" includes taking into account a variety of national circumstances that affect the nation's greenhouse gas limitations policies. Insofar as our nation is concerned, those circumstances are set forth in the lengthy chapter on "National Circumstances" and in the analysis at pages 25 et seq of the chapter on "Mitigation Actions," which show, among other things, projected economic growth.

Second: We specifically object to the EPA's criticism that "the plan fails to list additional policies that would return emissions to 1990 levels or even to launch a dialogue on what additional policies might be considered." There are two bases for our objection:

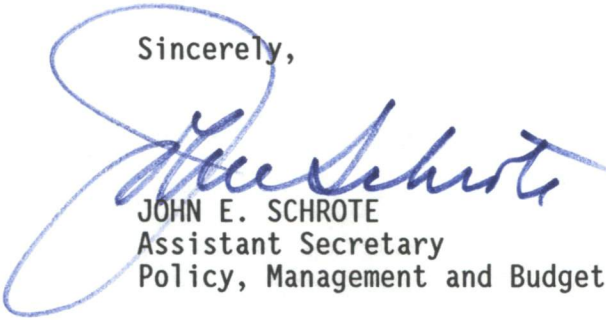
(1) The Convention in no way calls for discussion of potential policies that have not been adopted by a nation.

(2) From the very beginning of interagency consideration of the scope and content of the USNAP, it has been agreed by all participating departments and agencies, including EPA, that the USNAP to be prepared would be based solely on existing legislation, policies, and programs. Throughout the process of developing the detailed outline of the USNAP and preparing the multiple drafts of the various chapters, all participants understood that there would not be an attempt to develop material on potential policies that have not yet been adopted. For EPA to raise at this late date an objection to the USNAP based on a departure from the agreed approach to the USNAP is untimely and unproductive.

Third: It was agreed by the involved agencies that notice of the USNAP would be published in the Federal Register and comments thereon would be invited. Such comments as may be received may be of benefit to those who have the responsibility for preparing future iterations of the USNAP. But, that in no way implies that the U.S. Government should not distribute at the INC meeting, in keeping the President's public commitment, made at the UNCED in Rio, the highly credible document that now exists.

We trust that you will honor the unanimous views of the departments and agencies (other than EPA) regarding the importance of distributing the USNAP at the INC meeting. If there is any doubt about the decision made on Wednesday, we suggest that there be a full Cabinet meeting with the President to discuss the situation.

Sincerely,



JOHN E. SCHROTE
Assistant Secretary
Policy, Management and Budget

cc: Michael Deland, CEQ
Linda Stuntz, DOE
Paul Gilman, OMB
David Bradford, CEA
Robert Reinstein, DOS
J. R. Spradley, DOC
Richard D. Morgenstern, EPA

"Document Control"

TYPE: INFORMATION

DOCUMENT NUMBER: 9203611

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: TRAIN, Russell: THE NATIONAL COMMISSION ON THE ENVIRONMENT

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 12/02/92

SUBJECT: HE IS FORWARDING A COPY OF THEIR REPORT "CHOOSING A
SUSTAINABLE FUTURE".

DIRECTORATE

STAFF

ASSIGNED:

ASSIGNED:

ACTION
REQUIRED:

STAFF
ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE:

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
ENVIRONMENT

WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE:

EXT:

REMARKS: ENCLOSURES TO DAB.

OSTP RECEIVED: 12/11/92

DEPT RECEIVED:

FILE: P-ENVIRONMENT

CENTRAL FILES:

3611

The National Commission on the Environment

1250 Twenty-Fourth Street, NW, Suite 500, Washington, DC 20037

202/293-4800 Fax: 202/293-9211

December 2, 1992

*Russell E. Train,
Chairman*

Peter A.A. Berle

John E. Bryson

A.W. Clausen

Douglas M. Costle

Madeleine May Kunin

Gene E. Likens

Cruz A. Matos

Gilbert S. Omenn

Paul H. O'Neill

Alice M. Rivlin

Priscilla Robinson

Steven C. Rockefeller

William D. Ruckelshaus

Gloria R. Scott

James Gustave Speth

Lee M. Thomas

Victoria J. Tschinkel

Robert M. White

*Terry Davies,
Executive Director*

*Amelia Salzman,
Project Director*

D. Allan Bromley
President's Science Advisor
358 Old Executive Office Building
Washington, DC 20506

Dear Allan:

I am pleased to send you a pre-publication copy of "Choosing a Sustainable Future," the report of the National Commission on the Environment. As you will see, your contributions to this undertaking were very helpful.

The main theme of our report is the interdependence of environmental and economic policies. Thus, we argue for fundamental, philosophical changes in the U.S. approach to environmental policy. Environmental policy must be fundamentally reoriented from cleanup to prevention of environmental harm in the first instance, to avoid pollution problems and also to protect habitat, natural systems, and biodiversity.

Our report enumerates specific, solution-oriented recommendations. For example, we call for correcting economic measures and accounting systems so that they incorporate environmental costs and values. Getting prices right will encourage environmentally appropriate behavior, by, among other things, reducing consumption and encouraging the development and use of green technologies. Economic signals alone will not suffice to meet the environmental challenges ahead, however. Environmental literacy--responsible and informed citizens, businesses, and government--will be necessary to generate the extra efforts that are beyond the reach of economic or legal incentives. And, effective governance will be pivotal.

I hope that you will agree that this report is a compelling statement urging the United States, and indeed the world, actively to embrace the concept of sustainable development. Again, I thank you for your important contributions.

Sincerely,

Russell E. Train
Chairman

Convened by World Wildlife Fund



Recycled Paper



**Prepublication Copy
Not for citation or quotation
until December 14, 1992.**

**CHOOSING A
SUSTAINABLE FUTURE**

*The Report of the National Commission
on the Environment*

Final copies will be available from Island Press in January 1993.

TYPE: ACTION DOCUMENT NUMBER: 9203482
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS C

FROM: IVANOV, V.N.: HEAD OF DEPT OF BOUNDARY LAYER PHYSICS (RUSSIA)

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 11/17/92

SUBJECT: A PROPOSAL FOR A COOPERATIVE PROGRAM ON CLOUD
SEEDING

DIRECTORATE STAFF
ASSIGNED: ENVIRONMENT ASSIGNED:

ACTION STAFF
REQUIRED: AS APPROPRIATE ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 12/07/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT: 12/03/92

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:
REMARKS: Maynard, O'Neil & LeRoy met with this group on 12/3/92.

OSTP RECEIVED: 11/20/92 DEPT RECEIVED:
FILE: P-ENVIRONMENT
CENTRAL FILES:



Dr. D.Allan Bromley
Science Adviser to the President
The White House
Washington, D.C.20506
USA

RECEIVED

92 NOV 20 P12:23

Copies to
Mr. William M.Malamud
Assistant Director
Project Development
SPC International Corporation
1500 Wilson Boulevard
Arlington, Virginia 22209-2454
USA

OSTP
MAIL ROOM

A.P.Khain
Associate Professor
Institute of Earth Sciences
The Hebrew University of Jerusalem
Jerusalem, Israel
FAX 972-2-662581

Dear sir,

Having got from A.P.Khain, associate professor of Institute of Earth Sciences (The Hebrew University of Jerusalem) a proposition about cooperative program of scientific investigation in the field of development of mesoscale models of real dynamic processes, connected with clouds and precipitations, we send our application "Investigation of cumulo-nimbus clusters and the connections of their evolution with atmospheric boundary layer features for mesoscale models verification and for the choice of optimal time and conditions for cloud seeding" (Boundary layer and precipitations).

In the project the precipitation of Israel (A.P.Khain) is proposed.

It is possible that scientists from USA (some of them are mentioned in the program) would be interested too.

Yours sincerely,



V.N. Ivanov, professor,
Head of Department of Boundary
Layer Physics
249020 SPA "Typhoon"
Lenin Street, 82,
Obninsk, Kaluga Region, Russia
Tel.: (08439) 71705
Telex: 412633 INFOR SU
E-mail: "Typhoon"@adonis.ias.msk.SU

PROJECT

Investigation of cumulo-nimbus clusters and the connections of their evolution with atmospheric boundary layer features for mesoscale models verification and for the choice of optimal time and conditions for cloud seeding.

(Boundary layer and precipitations)

Abstracts

Project activity includes field experiments to reveal the way of cumulo-nimbus clusters of various scales interaction for the short-range precipitation forecasting improvement and the best choice of cloud seeding time and place. The mesoscale models verification is proposed as well.

Measuring facilities include meteorological radars for quantitative estimation of precipitations and clouds water reserve in stationary and moving variations satellite methods to determine the radiobrightness terrain and clouds upper border temperature, visible and infrared clouds images; 300-m high meteorological tower equipment; the network of meteorological and aerological stations in the region of observations. The use of some new instruments prepared for this project specially is possible too.

After the end of the project a scientifically - grounded basis of external conditions favourable for cloud seeding is proposed to develop.

Contents

1. The goal of the project
2. The state of the problem
3. The working assumptions
4. Facilities methods
5. Mesoscale models and their essential properties
6. The matter of the project and proposed data
7. Expected scientific results
8. Foundation
9. Proposed participants
10. List of references

1. The goal of the Project

The goal of this Project is to reveal the way of cloud clusters of various scales interaction with taking into account of boundary layer structure evolution, and the use of results to verificate the mesoscale models of dynamic processes and cumulo-nimbus development, to predict the external conditions for cloud seeding experiments.

2. The state of the problem

Recent investigations showed that the mesoscale circulations provoking cumulo-nimbus clusters have properties of hierarchy and quasi-periodicity. Thus the smaller-scale circulations occur to be elements of larger-scale ones, which manage them. The corresponding periodic componets are observed in the spectra of meteorological values. In the lower layer of the atmosphere zones of wind vector convergence may be revealed using the data of some meteorological stations disposed closely enough. So the results of the cumulo-nimbus cloud seeding must be connected not only with the individual cloud structure, but with the phase its evolution and the clouds position in the cluster.

The former investigations of cumulo-nimbus cloud clusters made in the Middle of European Russia and in Moldova allowed to reveal some of indications and features of this phenomenon and to develop some procedures.

The state of knowledge in this area is however not sufficient to use it in the precipitations nowcasting or when choosing the external conditions for the best time and place of cloud seeding. The mesoscale models we know were not verified to simulate this phenomenon adequately. The complex use of different level models: from mesoscale ones based on external conditions up to the individual cumulo-nimbus cloud model with its microstructure were never performed.

3. The working assumptions

The time rhythm and spatial mesoscale formations in the hierarchy of cumulo-nimbus cloud clusters really exist although this process are not strictly periodic. Their time and space scales may be different under various geographical and background weather conditions.

Knowing of the rhythms and phase of the system in any specific case may help when cumulo-nimbus clouds evolution, place and time of precipitation now casting, optimal time and place for cloud seeding choice.

Zones of local wind convergence, revealed in the boundary and surface layer, may serve as predictors for precipitation now casting.

Mesoscale prognostic models when taking into account all physical factors managing the rhythms of hierarchy and cumulo-nimbus cloud clusters evolution correctly and completely enough must simulate these structures.

Using different-level models (for the individual cloud with description of its microstructure; for cellular streets and hexagones clouds; mesoscale cloud structures) it will be possible to base scientifically the choice of the most favourable external conditions for cloud seeding including the optimal place and time for it.

Methods developed in the region near Moscow with the use of the Obninsk facilities will be possible to adopt for other regions (for inst. in Israel, USA and other). To make it possible it is expedient to fulfill the special analysis of meteorological records in the region of proposed cloud seeding.

In the conclusion of project recommendations will be given about observational network and procedures of data handling.

4. Facilities, methods

To investigate this phenomenon it is supposed to use the meteorological mast of NPO "Tayphoon", meteorological radars, remote sounding of radiobrightness temperature of clouds upper border, satellite visible and infrared images of clouds, the network of meteorological stations, and a special meso-scale device to measure the wind field divergence.

The meteorological mast with its instruments provides wind vector profiles (velocity and direction), temperature profiles up to 300 m with necessary time resolution and averaging.

Meteorological radars in the circle around Moscow with the radius of 200 km provide the disposition of cloud clusters and precipitation zones, helps to evaluate the wind speed. To determine the clusters hierarchy the pictures are matched in the moving co-ordinates.

The satellite images allow to distinguish cloud clusters fields in the visible and infrared ranges, to determine the radio brightness temperature of clouds upper border.

The meteorological network of increased frequency (near Moscow) will be used to calculate the wind field convergence in cloud cluster zones on the basis of data objective analysis. The procedure was developed is the Hydrometeorological centre.

System for wind field convergence estimates in the boundary layer may be specially worked out on the observation basis about 1000 m long.

It is possible during the experiments the use of other facilities including from other countries. The final list will be determined at the time of the working program discussion.

5. Mesoscale models and their essential properties

1) Mesoscale prognostic model for weather short casting including local precipitations. Has 20 level in vertical up to 10,5 km with changing step, three-dimensional, 30 x 30 points, horizontal grid spacing 10,5 km, nonhydrostatic, with boundary layer turbulent exchange and radiation parameterization. Prepared in the Hydrometeorological centre of R.F.

2) The lower layer of the atmosphere model, 12 levels in altitude up to 6 km, with changing step, 21 x 21 points with horizontal grid spacing 4 km. The calculation domain has one grid enclosed; three-dimensional, hydrostatical with turbulent exchange parameterization; takes into account orographical and terrain temperature unhomogeneities. is prepared in NPO "Typhoon".

It is possible to use other models too, in particular models of A.P.Khain and L.Kh.Ingel which simulate the coherent structures of the cloud street type in the flow with shear, and other models, developed in USA as well.

6. The matter of the project and proposed dates

1) The working program preparation - 1993, I-II quarters. The information exchange is proposed between NPO "Typhoon", Hydrometeorological centre of R.F. and scientists from Israel and USA as well in the following directions

a) Corroboration of regularities observed in Moscow region and Moldova to be inverse for other regions (Israel, USA)

Mathematical models of different levels of detail
Subsidiary information concerning the project

b) Mathematical models of different level analysis, possibility of their common using, procedures of their verification, requirements to observation network.

c) The field experiment program elaboration. For this a meeting, would be expedient to co-ordinate all questions.

2) The preparation and performance of the field experiment including meteorological mast, radar observations, satellite images, meteorological network around Moscow and other facilities; 1993, II-IV quart, 1994, II-IV quart.

About 20 sets of experiments are proposed with zones of local precipitation registration from cumulo-nimbus clouds, other aerometeorological values affecting the precipitation occurrence %. Information about precipitation zones and space cloud clusters, their time scales connection will be available. A measuring system to estimate wind field convergence will be developed and tested. The observed and prognostic data about precipitation will be compared.

3) Results handling and analysis. Using them for mesoscale models verification and recommendation development when precipitation from cumulo-nimbus clouds nowcasting; the evaluation of favourable external conditions for cloud seeding 1994-1995 years.

7. Expected results

The features of various scales cloud clusters interaction and its influence on precipitations from cumulo-nimbus clouds; mesoscale mathematical models verificated with the data of field experiments; use of different level models to improve the precipitations prediction and to choose clouds for seeding; scientifically grounded evaluation of succesful seeding probability.

8. Foundation

	Value	
	dollar(thous.)	roubles (mln)*
1. Computer and communication.	20	-
2. Computer Program elaboration for observation data handling and analysis; the data bank organization.	15	5
3. Program development to improve models	15	10
4. Experiment conducting in 1993 and 1994 y.	30	3
5. Missions	20	2
In all:	100	20

* Foundation is made by every institution participant

Participant proposed:

1. V.N.Ivanov
Professor
Head of the Department
SPA "Typhoon"
2. N.L.Byzova
Professor
Primary research worker
SPA "Typhoon"
3. D.Ja.Pressman
Head of the Department
Hydrometeorological research
centre, Moscow, R.F.
4. A.A.Zheltnin
Leading research worker
Head of the Department
Hydrometeorological research
centre, Moscow, R.F.
5. A.P.Khain, Associate Professor
Institute of Earth Sciences
The Hebrew University of Jerusalem
Jerusalem, Israel
6. Representatives of the Moldavia
Anti-Hail Protection Service

It is possible to invite some scientists from USA:

1. T.W.Schlatter; Forecast Systems
Laboratory; Boulder, Colorado
2. M.A.Shapiro Wave Propagation Lab.
3. S.A.Doswell; J.M.Lewis. National Serve storms
Laboratory Norman, Oclahoma

Address: V.N.Ivanov, Professor,
Head of the Department of Boundary Layer Physics
249020 SPA "Typhoon"
Lenin Street, 82, Obninsk, Kaluga Region, Russia
Tel.: (08439)71705
Telex: 412633 INFOR SU
E-mail: "Typhoon"@adonis.ias.msk.SU

List of references

1. Zhelnin A.A., Starostin A.N. The nowcasting and the problem of mesoscale atmosphere processes predictability Meteorology and hydrology, 1987, N 10 (in Russian)
2. Veltischev N.F., Kiselnikova W.Z., Zhelnin A.A., Pekelis E.N., Pressman D.Ja. Mesoscale numerical weather prognosis. Meteorology and hydrology, 1982, N 2 (in Russian)
3. Byzova N.L., Ivanov V.N., Garger E.K. Turbulence in the atmospheric boundary layer. - Leningrad: Hydrometeoizdat, 1989 (in Russian)

"Document Control"

TYPE: INFORMATION

ORIGINATOR: 02

STATUS C

DOCUMENT NUMBER: 9124490

DIRECTORATE STATUS

FROM: RICUPERO, Rubens: AMBASSADOR OF BRAZIL .

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/18/91

SUBJECT: RE: U.S. CO-OPERATION WITH BRAZIL IN A COMPREHENSIVE
PILOT PROGRAM TO HALT THREATS TO BRAZIL'S RAIN
FOREST.

DIRECTORATE
ASSIGNED:

STAFF
ASSIGNED:

*DAB / JTK
Does this need
an acknowledgment
D
10/25*

ACTION
REQUIRED:

STAFF
ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE:
DATE COMPLETED: STAFF DUE DATE
DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
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REMARKS:

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BRAZILIAN EMBASSY
3006, Massachusetts Avenue NW
WASHINGTON, D.C. 20008

RECEIVED

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OFFICE OF THE
DIRECTOR
Washington, D.C., October 18, 1991.

Dear Mr. Bromley:

As you may be aware, the Heads of State and Government of the "Group of Seven" declared, at their Houston Summit held in July 1990, that they were willing to co-operate with Brazil in a comprehensive pilot program to halt threats to the country's rainforest.

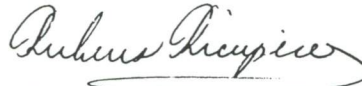
Since then, Brazil has been working with the Commission of the European Communities and the World Bank in the preparation of an ambitious plan of action, entitled "Pilot Program for the Conservation of the Brazilian Rainforest". The original proposal was completed and forwarded to the "G-7" Leaders before their London Summit this year.

The Program's budget amounts to US\$ 1,56 billion over a five-year period, to be invested in several structural and demonstrative projects aimed at the promotion of a model of sustainable development for the Amazon region and other rainforest areas in Brazil.

Additional documents on the Pilot Program are currently under preparation for presentation at a meeting of Brazil, EC, World Bank and G-7 representatives, in December. It would be highly desirable that this meeting might result in concrete disbursement commitments by the donor community, allowing for the immediate start-up of Program actions.

Aware of the close interest you attach to environment and development issues, particularly in relation to rainforest conservation, I am sending you herewith a summary of the Pilot Program initiative, including updated prospects for its implementation.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Rubens Ricupero', with a stylized flourish at the end.

Rubens Ricupero
Ambassador of Brazil

encl:1

PILOT PROGRAM FOR THE CONSERVATION OF THE BRAZILIAN RAINFOREST

1. The Brazilian Amazon corresponds to the Northern region of the country (4,906,787 km²) integrated by the States of Acre, Amazonas, Roraima, Pará, Amapá and Rondônia, and an additional area with similar physical characteristics, comprising parts of the states of Maranhão, Tocantins and Mato Grosso. It corresponds approximately to the Amazon river drainage basin and represents more than 50% of the total mass area of Brazil.
2. Most of the area is covered by the world's largest rainforest (3.500.000 km², according to FAO) with one of the highest indices of biodiversity. There are more than 60.000 species of plants, 2.000 species of fish, more than 300 species of mammals, 11% of the birds of the world and an undetermined number of microscopic forms of life.
3. The mineral wealth of the Brazilian Amazon has been estimated at US\$ 3 trillion, with deposits of gold, tin, iron, copper, bauxite, uranium, potassium, rare earths, niobium, sulphur, manganese, schist, diamonds and other precious stones, and possibly petroleum. New mineral deposits are still being discovered.
4. The Amazon population is estimated at 16,5 million (11% of the Brazilian population), of which 60% are urban dwellers. The rural areas are inhabited by settled farming populations, squatters in the agricultural frontier, riverine communities, gold-diggers, rubber

tappers and indians. Migration, more than vegetative growth, accounts for most of the Amazon population increase.

5. The forest biomes of the Amazon basin are a major natural resource, providing at least four specific environmental services: maintenance of the largest single reserve of faunal and floristic diversity in the world, sequestration of atmospheric carbon, control over local and regional climates, and protection of watersheds. These services are not evaluated in market terms. The Amazon region also shelters many ethnic groups and distinctive life styles, the preservation of which is a priority to the Brazilian Government. These externalities justify intervention by public authorities to curb indiscriminate deforestation. Two of them - protection of biodiversity and carbon sequestration - are global in scope and therefore justify international concern over the region, while recommending the enhancement of international co-operation for forest protection and the sustainable use of its natural resources.

6. At the Houston Summit, held in July 1990, Heads of State and Government of the Group of Seven declared: "We are determined to take action to increase forests while protecting existing ones and recognizing the sovereign rights of all countries to make use of their natural resources. (...) We welcome the commitment of the new Brazilian Government to help arrest this destruction and to provide sustainable forest management. We actively support this process and we are ready to cooperate with the government of Brazil on a comprehensive Pilot Program to counteract the threat to tropical rain forests in that country."

7. The Government of Brazil strongly welcomed this offer for co-operation and, following a request by the G-7, immediately started

the preparation of the Pilot Program in co-operation with the World Bank and the Commission of European Communities (EC). By June 1991, prior to the London Summit celebrated in July, a comprehensive program prepared and reviewed at several tripartite meetings was forwarded by President Collor de Mello to the Heads of State and Government of the Group of Seven.

8. The aim of this document, entitled "Pilot Program for the Conservation of the Brazilian Rainforests", is to maximize the environmental benefits of Brazil's tropical rainforest consistently with national development goals. It will help create a development model for the region that will prove sustainable. The Program's budget amounts to US\$ 1.56 billion over a five-year period. The first phase includes a nine-month pre-investment stage at US\$ 50 million with operational activities scheduled to take place over the next 18-24 months, at US\$ 250 million. The second phase, from 1993-94 on, would represent an investment of US\$ 1,3 billion. It is proposed that G-7, EC and other potential donors provide the requested financial resources in the form of grants or highly concessional loans, to be invested in several "structural" and "demonstrative" sub-programs, the former related to the execution of governmental environment & development guidelines and the latter to specific regional priorities and problems in forest areas.

9. These financial resources should add to the existing commitments of government resources and to other concessional and non-concessional international resources for development and environmental protection. The Brazilian counterpart to the Programme would come in the form of widespread technical assistance for its implementation as well

as the costs already incurred in the elaboration of the Pilot Programme itself.

10. Efforts at environmental protection will only be successful in the Amazon region and other forest areas if they are compatible with the Brazilian development goals and, in particular, with the promotion of adequate standards of living for local communities, whose support is fundamental to conservation initiatives to succeed. The Pilot Programme, therefore, embodies efforts to test and develop sustainable economic activities in the Amazon environment. These activities require initial investments, education and information programs, and the development or adaptation of new technologies, at affordable costs, so that they become viable alternatives to present economic activities imposing threats to the environment.

11. In its Economic Declaration at the London Summit, the G-7 acknowledged the progress made in developing the Pilot Programme. Brazil welcomed, in particular, the unequivocal engagement of the Seven to financially support the implementation of its preliminary stage, and the announced commitment of US\$ 50 million to it. We share the sense of urgency with which the G-7 Heads of State view further preparation for the Program and are firmly committed to move forward quickly. In so doing, we believe to be responsive to the G-7's willingness to effectively cooperate with the Brazilian Government to counteract the current threats to our tropical forests, as reiterated in the London Summit Declaration.

12. Following the request by the G-7 on more detailed program and project information, Brazil has prepared and presented a progress report including the Terms of Reference for the activities included in

the Program's first stage and strategies for its implementation, follow-up and evaluation. We are presently co-operating with EC and the World Bank in elaborating three additional documents requested by our counterparts, focusing on (a) assessment of activities related to the Pilot Program, (b) implementation and evaluation procedures and (c) international institutional arrangements and financial mechanisms recommended for the Pilot Program.

13. Brazil expresses the hope that these remaining tasks be completed as soon as possible, allowing for a final agreement with the G-7 in the meeting already scheduled to take place next December in Geneva, avoiding new delays in the initiation of the Pilot Program.

14. It is our understanding furthermore that such an unprecedented offer of cooperation should not fall under the existing bilateral and multilateral mechanisms. Brazil is convinced that the issue magnitude calls for the provision of specific grants and loans that should be additional and new.

15. Brazil is expecting a concrete reaction to the proposals it has forwarded and is ready to move ahead in the effort to lay the grounds for an innovative, effective international cooperation geared to forestall all threats to the global environment and promote sustainable development.

THE WHITE HOUSE

WASHINGTON

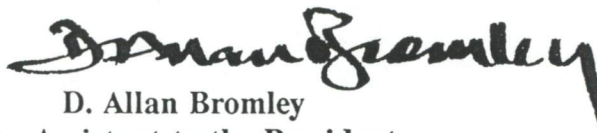
December 4, 1991

Dear Ambassador Ricupero:

Thank you for your letter of October 18, 1991, and the accompanying summary of the "Pilot Program for the Conservation of the Brazilian Rainforest" initiative. I applaud your efforts to help save the Brazilian rainforest. It is important that everyone do his or her part to conserve and improve our environment.

Best wishes.

Sincerely,

A handwritten signature in dark ink, appearing to read "D. Allan Bromley". The signature is fluid and cursive, with the first name "D." being small and the last name "Bromley" being larger and more prominent.

D. Allan Bromley
The Assistant to the President
for
Science and Technology

Ambassador Rubens Ricupero
Ambassador of Brazil
Brazilian Embassy
3006 Massachusetts Avenue, N.W.
Washington, D.C. 20008

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9203359
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: HABICHT, F. Henry: ENVIRONMENTAL PROTECTION AGENCY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/13/92

SUBJECT: HE IS FORWARDING FOR DR. BROMLEY'S REVIEW AND
COMMENT A DRAFT OF THE EPA'S PEER REVIEW POLICY.

DIRECTORATE STAFF
ASSIGNED: ENVIRONMENT ASSIGNED:

ACTION STAFF
REQUIRED: REVIEW/COMMENT TO DAB ACTION:

SENDER'S DUE DATE: 11/25/92
OSTP DUE DATE: 11/25/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT: *close out*

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #:

CONTACT PERSON:

PHONE:

EXT: *↑*

REMARKS:

*Responded by phone
11-17-92
DOB*

OSTP RECEIVED: 10/30/92
FILE: P-ENVIRONMENT

DEPT RECEIVED:

CENTRAL FILES:



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 13 1992

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OSTP
MAIL ROOM
OFFICE OF
THE ADMINISTRATOR

The Honorable Allan Bromley
Director
Office of Science and Technology Policy
Old Executive Office Building #358
Washington, D.C. 20506

Dear Dr. Bromley:

Enclosed for your review and comment is a draft of the Environmental Protection Agency's (EPA) Peer Review Policy. Your comments would be most helpful to me if we received them by November 8, 1992.

In early 1991, EPA's Administrator, William K. Reilly, established an independent group of academic scientists: The Expert Panel on the Role of Science at EPA. He charged the panel with evaluating how EPA can meet the goal of using sound science as the solid foundation for Agency decisionmaking. In March 1992, the Panel published its report to the administrator: *Safeguarding the Future: Credible Science, Credible Decisions* (copy enclosed). One of the major findings in the report was that EPA does not have a uniform procedure for obtaining peer review of its scientific products. The Panel recommended that the Agency institute a peer review policy that would consistently apply to the planning and evaluation of all technical efforts in both the Program and Regional offices.

In response to the recommendation, the Agency's newly appointed Council of Science Advisors (composed principally of the EPA science advisors to the Assistant Administrators and Regional Administrators) has prepared the attached draft Peer Review Policy. This Policy, which focuses on external peer review, is part of a larger effort to reach out to the scientific community beyond EPA in order to obtain the best technical input and insights in the development of Agency positions.

This larger commitment to what we are calling "peer involvement" will be reflected in consultations, workshops, and the like, in addition to increased peer review. Once the Peer Review Policy is finalized, I will ask each of the Program and Regional Offices to develop specific plans for implementing this Policy over the next several months.

I expect that the peer review policy will improve the credibility of our decisions by improving the credibility of the technical base upon which they are founded. Thank you for your thoughtful evaluation of this Policy. Please send your comments to the Council of Science Advisors, in care of Mr. Joe Desantis at the following address:

USEPA
Mailcode (H-8105)
401 M St., SW
Washington, D.C. 20460
Fax 202-260-6932

If you care to discuss any specific aspects of the Policy, please feel free to call Peter Preuss at (202)260-7669 or Don Barnes at (202)260-4126.

*This is an important
step - Thanks for
your leadership
AH for less*

Sincerely,



F. Henry Habicht II
Deputy Administrator

Enclosure(s)

DRAFT Peer Review Policy Statement by the CSA 8/26/92
Do not cite or quote

DRAFT

PEER REVIEW POLICY AT
US ENVIRONMENTAL PROTECTION AGENCY

Prepared by the EPA Council of Science Advisors

August, 1992

DRAFT Peer Review Policy Statement by the CSA 8/26/92
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PEER REVIEW POLICY:
US ENVIRONMENTAL PROTECTION AGENCY

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Figure I: Peer Involvement (Including Peer Review) in Science and the Environmental Regulatory Process

PEER REVIEW POLICY

AT US ENVIRONMENTAL PROTECTION AGENCY

I. Introduction

A. Peer Involvement and Peer Review

EPA's mission to protect public health and the environment requires that actions and policies be based on the best available scientific information. Given the complexity and breadth of scientific information necessary for environmental decisionmaking, the Agency and the Nation are best served by involving the broader scientific and technical community in its deliberations in order to assure that Agency actions are based upon "good science". The Agency seeks to achieve this end through a process of peer involvement, which includes a vigorous policy and practice of peer review.

For purposes of this discussion, peer involvement refers to the active outreach to and participation of that broad scientific, engineering, and economics community both within and beyond EPA. The goal of peer involvement is to assure that the best technical¹ thinking is reflected in Agency positions through an open exchange of scientific information, insights, and ideas, which, under favorable conditions, leads to a broad consensus on the technical basis for Agency decisions. This peer involvement enters the Agency's flow of business at many different points (See Figure I). In the future, the Agency plans to describe more fully its practice of peer involvement. Its policy on this issue remains: "Early and often".

Peer review is one very important aspect of peer involvement. Peer review refers to the use of independent technical experts who are not associated with the generation of

¹For purposes of this paper "technical" refers to "scientific, engineering, and economic analytical".

an Agency product, critically evaluating the technical aspects of that product. The output of the peer review process is an independent, objective judgment on the technical merit of the product. Whereas peer involvement generally connotes an informal, collegial, and exploratory interaction, peer review connotes a more formal, arm's length, and judgmental interaction.

Regulation development at EPA provides many opportunities for interested parties to have input to decisions as they evolve. Some of these opportunities fall under the rubric of peer involvement, providing interaction with the technical community. However, there are additional avenues that extend to people in other sectors of society. For example, formal "notice and comment", public hearings, petitions, and other devices appropriately assure that affected groups and individuals, as well as the general public, are heard when it comes to fashioning rules, regulations, and policy that will affect their lives. However, this broader public participation--which includes expression of a wide range of legitimate concerns raised by Agency actions--is not the same thing as peer involvement or peer review. These peer activities have as their primary focus the technical underpinnings, rather than the policy positions, of Agency decisions and regulations. This policy statement applies directly to the peer review component of peer involvement, but not to the broader public comment process.

B. The Report of the Expert Panel

Peer involvement and peer review are not new to the Agency. For many years the Agency has conducted workshops on many occasions, often solicited technical information, and utilized formal peer review mechanisms such as the Science Advisory Board and the FIFRA Scientific Advisory Panel for some of its most important products. However, the importance of such interaction for consideration of technical issues has been highlighted in a recent report commissioned by the Administrator entitled Safeguarding the Future: Credible Science, Credible Decisions (March 1992).

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The authors of the report were four academic scientists and engineers (Expert Panel) who have had considerable experience in the application of science to governmental decisionmaking. This Expert Panel, charged by the Administrator with reviewing the role of science at EPA, made several recommendations for improving the development and use of sound science in Agency decision-making. One major finding and recommendation concerned peer review:

FINDING: "EPA requires that its scientific research products undergo peer review. However, the Agency does not have a uniform process to ensure a minimum level of quality assurance and peer review for all the science developed in support of Agency decision making."

RECOMMENDATION: "Quality assurance and peer review should be applied to the planning and results of all scientific and technical efforts to obtain data used for guidance and decisions at EPA, including such efforts in the program and regional offices. Such a requirement is essential if EPA is to be perceived as a credible, unbiased source of environmental and health information, both in the United States and throughout the world."

The scope of peer review recommended by the Expert Panel goes beyond that currently practiced by EPA. Too often, peer review has been viewed as an "end-of-pipe" control that retrospectively assesses the technical quality of a near-final product. The Expert Panel report makes clear that independent, rigorous peer review is necessary at critical stages throughout the development of analyses that support Agency positions--from concept planning, through development, as well as the final stages. This need for critical attention to the underlying strength of the technical analysis is found in all parts of the Agency: the program offices, the policy office, and the Regions, in addition to the more often considered Office of Research and Development. Thus, peer review can and should encompass a broad range of issues including, but not limited to, statistical

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design, data collection, monitoring, research and development,
data analysis, risk assessment, technical and regulatory support
documents, economic analysis, and remediation options.

In short, the Expert Panel was not commenting on the absence
of peer review at EPA, but rather the lack of a systematic,
functional policy of peer review that is articulated and followed
consistently throughout the Agency. It is that need--for an
operational policy of peer review effectively involving the
outside technical community--that this document is intended to
address.

Historically, peer review efforts at EPA have centered on
scientific and engineering products. However, the concept of
peer review is important for information and analyses from any
discipline. On occasion, the Agency has operationally extended
peer review to include economics(e.g., the Science Advisory
Board's recently created Environmental Economics Advisory
Committee), and this policy formally extends peer review
principles to this field. Further, the principles espoused in
this policy can serve as useful guidance for development and
review of information derived from the other social sciences,
areas in which the Agency is becoming increasingly active; cf.,
EPA's Social Sciences Research Strategy, 1992.

C. Overview of the document

While this document announces the Agency's commitment to
peer involvement, it focuses on the Agency's policy of peer
review and describes how that policy will be implemented through
the Agency. Section II states the Agency's policy on peer
review; Section III discusses general aspects of implementation;
and Section IV provides more specific guidance to Agency Programs
and Regions on implementing this peer review policy. The
document closes with a short summary in Section V.

II. Peer Review Policy

The USEPA is committed to peer review of the technical
underpinnings of Agency positions. This policy establishes

principles for the conscious and consistent use of peer review throughout the Agency, with the ultimate goal of ensuring credible technical bases for credible decisions, as a part of the greater peer involvement process between EPA and the external technical community. Implementation of this policy will involve review by independent, objective scientific, engineering, and economic experts who represent a balanced range of credible technical opinion on the issues. Consistent with the implementation plans described in Sections III and IV, peer review will take place at appropriate stages in the development of Agency positions, from concept stage to final product.

This policy recognizes the great number and diversity of technical information and products which form the basis of Agency actions. Thus, the extent, magnitude, and type of peer review will be determined by Program and Regional Offices, subject to the general criteria and mechanisms described below. Assistant Administrators and Regional Administrators are responsible for articulating and implementing specific peer review plans, with oversight by the Council of Science Advisors.

This policy will be applied to all future technically based issues that come before the Agency. It should be applied to the extent reasonable to issues that are currently under development in the Agency. This policy does not apply to past decisions, unless and until such topics are considered anew in the Agency's decisionmaking process.

The peer review policy is intended to improve the credibility of Agency decisions through the improved use of credible technical information. This policy gives no additional rights--express or implied--to extra-Agency interests, beyond those already included existing regulations and legislation.

III. Aspects of Peer Review Policy

A. Technical Activities or Products Potentially Subject to Peer Review

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The range of technical activities or products that support Agency positions is extensive. Therefore, Program and Regional Offices should consider the following examples of activities and products, in determining what should be subject to peer review.

Specifically, peer review applies to two general domains: data collection and data use/interpretation. Within each of these domains national, regional, and site-specific technical activities, including concepts, planning, protocols, and quality assurance procedures should be addressed. For example,

1. Technical aspects of the following data generation activities should be subject to peer review

- Concept design
- Survey design
- Monitoring
- Modeling
- Field evaluations
- Site assessments
- Research

2. Technical aspects of the following data use/interpretation activities should be subject to peer review

- Risk assessments (national and site-specific)
- Benefits assessments
- Cost-effectiveness assessments
- Environmental impact assessments
- Technology assessments
- Technical aspects of regulatory impact assessments
- Technical aspects of program guidelines or guidance
- Environmental management plans
- Optional technical control strategies
- Scientific basis for site-specific control decisions; e.g., permits and waivers

Note that in many cases, peer review of a generic technical issue early in the process is appropriate, while peer review of subsequent technical positions stemming from that generic issue may not be required.

Peer review is appropriate at various stages of the development of technical positions. For example, the concept for a research and development grant or contract should be peer reviewed to determine whether the goals are of sufficient merit to pursue and whether the expected data will add substantially to the science base. The methods and materials prepared for the project should be evaluated for adequacy. Finally the product(s) of the project, including the technical interpretations of the findings, should be peer reviewed when they are utilized in the development of Agency actions.

Note further that peer review in this context does not apply to the regulatory/policy decision that is based upon the technical information. Such decisions are the purview of risk managers who are charged with considering both the technical information (which is subject to the rigors of peer review) and the non-technical considerations that are legitimately considered in reaching a final decision; e.g., legal requirements, equity issues, etc. (which are not the subject of this peer review policy).

B. Criteria for selecting activities or products and setting priorities for peer review

Numerous criteria may be used for selecting which technical project, program, or product should undergo peer review. Examples of criteria that should be considered in making this selection and in setting peer review priorities include

1. Support for major regulatory decisions or policy/guidance of major impact

For example, a technical support document that underlies a major regulatory action; e.g., use of a predictive model to determine exposure to

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contaminants on a national or Regional basis and
to set regulatory levels.

2. Degree of public concern and controversy,

For example, a sampling plan at a particularly
contentious site; e.g., a site characterized by
pre-existing data of questionable value, extensive
community involvement, and/or Congressional
interest.

3. Significant investment of Agency resources

For example, scientific and technical grants,
contracts, and cooperative agreements need to be
evaluated for their technical merit before any
award is made and after their execution; e.g., all
technically-based contracts/grants above a certain
dollar amount.

4. Cross-agency/inter-agency implications

For example, science positions that are applicable on a
cross-media/inter-agency basis; e.g., the health
implications of levels of "dioxin" in the
environment and cancer risk assessment guidelines.

5. Treatment of new issues

For example, the initial development of Agency
positions in a new scientific area; e.g.,
assessment of global climate change.

6. Novelty of the technical procedures.

For example, an economic analysis incorporating a novel
use of contingency evaluation; e.g., the RCRA
regulatory impact analysis (RIA).

C. Mechanisms for and extent of peer review

The goal of peer review is to provide an objective,
independent, professionally qualified judgment as to the quality
of the technical basis for the Agency's position. The particular
mechanism (and extent) selected for a particular review depends

upon the importance of the action (See Section II.B) and the available resources. In any case, the Programs and Regions should assure that the basic goal of peer review is achieved.

While Offices/Regions may obtain the assistance of independent technical experts inside and/or outside the Agency for peer review, the Agency's commitment to the larger concept of peer involvement implies an intention to reach out to the technical community beyond EPA in order to obtain critical reviews of the most significant issues. Among the mechanisms that could be used (singly or in combination) are:

1. Intra-Agency peer review

a. Informal review; e.g.,

- 1) Technical experts in the office
- 2) Technical experts in other offices

For example, for review of generally routine matters; e.g., some speeches or papers/articles to be submitted for publication

b. Formal review; e.g.,

- 1) Risk Assessment Forum or equivalent cross-program body
- 2) Peer Review Group in Office of Pesticide Programs

For example, review of a cross-agency science policy position, such as risk assessment guidelines.

2. Extra-Agency peer review

a. Informal; e.g.,

- 1) Technical experts in other agencies; e.g., the Committee to Coordinate Environmentally-Related Programs (CCERP) in the Dept of Health and Human Services and the subcommittees of the Federal Coordinating Council on Science, Engineering and Technology (FCCSET) in the

President's Office of Science and Technology
Policy.

2) Technical experts outside of government

For example, an early step in the review of a
draft science policy, such as the
significance to humans of certain tumors
found in animal studies.

b. Formal

1) Ad hoc panel; e.g.,

- a) An especially convened panel of experts
- b) Ad hoc enlisted assistance of a professional
society

For example, review of major grant applications
or a background analysis or guidance document
for implementing a major scientifically-based
regulation.

2) Established panel; e.g.,

- a) EPA Science Advisory Board
- b) EPA Scientific Advisory Panel
- c) The National Academy of Sciences

For example, review of a particularly contentious,
high-impact issue where a body of scientific
information must be evaluated, such as
environmental tobacco smoke (ETS). Formal public
review is expected in cases having broad Agency
implications.

In some instances more than one mechanism of peer review is
appropriate. For example, the development of Agency risk
assessment guidelines often entail use of several of the
mechanisms listed above, culminating in SAB review. In general,
the more significant the issue, based on the criteria in Section
II.B, the more extensive the peer review should be. Also, the
more significant the action, the more essential it is that the
peer review be conducted in a formal, extra-Agency mode.

Each of the peer reviewers on a panel must bring recognized technical expertise to bear on the subject matter under discussion. Taken as a whole, the panel should represent a balanced range of technically legitimate points of view. In addition, care must be taken to reduce the possibility for real or apparent conflicts of interest between the reviewers and the Agency product they are being asked to review. Various tools are available to identify and limit such conflicts; e.g., paying attention to the employment, financial, and professional affiliations of the participants, directly exploring the issue with each of the participants, and publicly disclosing any previous involvement with the issue at the beginning of meetings. Assistance in determining legal conflicts of interest can be obtained through the Office of the General Counsel. This policy is not meant to exclude automatically participation by Federal, or even Agency, scientists, depending on the mechanism selected. In fact, in some cases such participation is particularly valuable, based upon technical expertise and unique experience of the individuals involved.

D. Peer review at various stages of position development

Offices should consider the need for and timing of peer review at various stages in the development of the Agency's technical basis for its position. Peer review at one or more of the following stages may apply to a given activity or product:

1. Conceptual stage

For example, during the initial considerations of whether to initiate and how to design a study; e.g., pesticide groundwater survey or any research and development contracts above \$500,000.

2. Protocol stage

For example, prior to beginning a major scientific analysis or funding a major project; e.g., careful investigation of case reports prior to initiating a new study.

3. Execution stage

For example, for a long-term project, where mid-course corrections may be appropriate or desirable; e.g., aspects of the multi-year Ecological Monitoring and Assessment Program (EMAP).

4. Final or retrospective

For example, for a review of the results of a research program in order to advise on its future directions, or to determine the impact that science can have in regulatory or science policy decisionmaking.

At any stage, care must be taken to assure that appropriate questions are addressed during the peer review. This charge to the peer review panel should focus the experts' attention on those technical questions that are most problematic for Agency and outside scientists. In general, the charge is meant to guide, but not artificially constrain, the panel from pursuing issues which, in their professional judgment, should be examined critically.

The technical issues facing the Agency are sometimes difficult to resolve, particularly when staff strongly present opposing views and managers do not have the time or expertise to settle the matter definitively. In such cases peer review can make a positive contribution by providing the input of the broader scientific community as a catalyst for moving toward resolution any internal EPA controversies over scientific matters .

In general, in the absence of significant new information, offices should generally not reopen issues that have been subjected to such an independent, external peer review. In such cases, considerable weight and deference should be given to the results of a thorough and appropriately constituted, peer review which has considered the questions at issue. The intent is to save peer review from evolving into an iterative process which ends up being a tool for delay rather than improvement.

E. Documentation and disposition of peer review comments

An important component of the peer review process is the documentation of peer review comments and their ultimate disposition. Depending on the peer review mechanism, comments may be captured in minutes, individual written comments, and/or formal reports (e.g., SAP reports). A record of the Agency's response to these comments will be maintained and may take any of several forms, including a formal response in the Federal Register, a compilation of responses in an Office docket, and/or a letter to the peer review panel. This response will be a part of the information provided to the Agency decisionmakers.

IV. Implementation and Management of the Peer Review Process

A. General Instructions

Each Assistant Administrator and Regional Administrator will develop a peer review implementation plan that describes steps for complying with this policy. The focus of the peer review plan is the technical underpinnings of the Agency's positions, not the positions themselves. The preference is to involve the outside technical community at appropriate steps in the process. The Council of Science Advisors will review each plan to ensure that the peer review policy is applied in a reasonably consistent manner among Program Offices and Regions and to foster an exchange of ideas and approaches to the benefit of all offices.

This policy document provides guidance for the Program Offices as they take the lead in developing implementation plans for national programs, in consultation with the Regions, upon whom most Program Offices depend for their implementation. The national plans will address procedures for peer reviewing technical issues that affect the country as a whole. In addition, to encourage a desirable degree of national consistency while allowing for Regional differences, each Program Office national plan will contain guidance (or a commitment to develop guidance) for the Regions on peer review of the technical basis of Regional actions taken under its programs, focusing on generic

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550 issues and categories of actions. This portion of the guidance
551 should allow for appropriate tailoring to Regional circumstances.
552

553 The guidance from these national plans will be consolidated
554 by the Regions into Region-specific plans, designated Regional
555 Standard Operating Procedures (SOPs) for Peer Review. The SOPs
556 will also discuss any relevant Regional activities not addressed
557 by the national program plans.
558

559 Program Office national plans should be completed within
560 three months and Regional SOPs within six months after this
561 policy is issued. As appropriate, the plans and SOPs will be
562 revised one year after submission and every two years thereafter,
563 or more frequently if desired.
564

565 B. Content of National Plans and Regional SOPs
566

567 Each plan developed by a national Program Office should list
568 all technically oriented actions or products of a recurring
569 nature which are potential candidates for peer review. Examples
570 of such items include permits, drinking water standards,
571 pesticide tolerances, and risk assessments of both a national and
572 site-specific nature (see Section III. A above). For each such
573 action or product, the plan should identify the "critical points"
574 at which technical information or data enter the development
575 process, critically affecting the end result. For those critical
576 points, the plan should outline the type of peer review, if any,
577 to be applied, which may vary depending on the nature and
578 significance of the individual action (cf., Section III. B
579 above). Alternatively, the plan could outline a process and
580 schedule for developing such decisions on peer review, since it
581 may be necessary to work out relationships with other Offices,
582 Regions, States, and outside groups. The plans should be updated
583 when such decisions are reached. As noted above, the national
584 plans will be used as the basis for the development of Regional
585 SOPs, which should follow a similar format.
586

587 In developing national plans and SOPs, Programs and Regions
588 should give due regard to the timing and resource implications of
589 peer review. They should find ways to integrate peer review into

ongoing procedures so as to maximize its effectiveness and to minimize costs and delays.

Each plan/SOP will also describe mechanisms for deciding on the appropriate level of peer review for non-recurring actions or products which are not specifically listed in the plan/SOP. Procedures for addressing the peer review comments (cf., Section III. E) will be included as well.

Finally, each plan/SOP will describe mechanisms for oversight and evaluation of the peer review process in order to identify both successes and problems and to learn from and improve the process over time.

C. Responsibility of the RAs/AAs, with oversight by the Council of Science Advisors (CSA)

The Regional Administrators and Assistant Administrators are responsible for the implementation of a credible, effective, and consistently applied peer review policy. The CSA will oversee the implementation and the application of the policy. In exercising this oversight function, the CSA will encourage collegial evolution rather than administrative control mechanisms, so that scientists and managers in different parts of the Agency can learn from each other's successes and failures.

Each Headquarters Office and Region will submit its implementation plan or SOP to the CSA for review. The Council will review the plans/SOPs, make cross-Agency comparisons, suggest improvements to the Risk Assessment Council, the AAs, and the RAs, and report to the Administrator on its findings and recommendations. However, the CSA does not have the authority to approve or disapprove plans/SOPs. The Council will respond to the Offices/Regions within one month of receipt of the Program Office and Regional plans/SOPs.

To help the Agency implement a sound peer review program, selected members of the technical community outside of EPA will be requested to review this policy. The Science Advisory Board

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will review the implementation and application of the policy on a periodic basis.

D. Applicability to delegated State programs

As a general matter, EPA encourages States to undertake peer review of delegated actions on a voluntary basis as appropriate and will take such peer review into account in any review or approvals it takes. Specifically, this Agency peer review policy covers formal and substantive review and approval by EPA of State actions with significant technical content. The appropriate type of peer review should be determined in the Program national plans and Regional SOPs. In general, when the underlying statute gives States broad discretion to adopt more stringent requirements than EPA specifies and EPA does not have the authority to disapprove such requirements, EPA will not subject them to peer review.

V. Summary

With this document the Agency announces its commitment to peer review of the adequacy and reliability of the scientific, engineering and economic analyses that constitute the technical underpinnings of Agency positions. Peer review is one aspect of the larger practice of peer involvement through which the Agency reaches out to the broader technical community.

During the three months following adoption of this policy, national Headquarters Programs, working in conjunction with Regions, will develop Program-specific national plans for effecting independent peer review. During the following three months, the Regions will integrate the guidance from the national Program Offices into standard operating procedures (SOPs) for Regional use. The Council of Science Advisors (and, to a lesser but important degree, the Science Advisory Board) will play a key role in overseeing the development and implementation of these activities.

This policy promotes conscious and consistent use of peer review throughout the Agency, with the ultimate goal of ensuring credible technical bases for credible decisions as a part of the

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670 greater peer involvement process between EPA and the external
671 technical community.
672

"Document Control"

TYPE: INFORMATION

DOCUMENT NUMBER: 9203059

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: RANDOLPH, James A.: U.S. DEPARTMENT OF ENERGY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/06/92

SUBJECT: HE IS FORWARDING A COPY OF HIS LETTER TO MORRIS
LEIGHTON REGARDING REPRESENTATION ON THE GEOLOGICAL
MAPPING ADVISORY COMMITTEE.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
ENVIRONMENT

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:
REMARKS:

OSTP RECEIVED: 10/07/92
FILE: P-ENVIRONMENT

DEPT RECEIVED:

CENTRAL FILES:

FAX: _____ MAIL: ☒

OSTP #: 920 3059

Date of Correspondence: 10/6

Date of Receipt of Correspondence: 10/7

From: James G Randolph

Affiliation: Asst Secy for Fossil Energy
Dept of Energy

Subject: copy of letter to Morris Leighton re representation
on the Geologic Mapping Advisory Cmte

Action:

FYI:

Assign to:

Due Date:

Copies to: Nancy M, DAB



Department of Energy

Washington, DC 20585

October 6, 1992

RECEIVED

92 OCT 7 P 3: 45

OSTP
MAIL ROOM

Dr. Morris W. Leighton
President
Association of American State Geologists
Illinois State Geological Survey
121 Natural Resources Building
615 E. Peabody Drive
Champaign, IL 61820

Dear Dr. Leighton:

This is in response to your August 4, 1992, letter concerning representation on the Geologic Mapping Advisory Committee. Please be advised your recommendation that Dr. Donald A. Juckett serve as the Department of Energy (DOE) representative to this committee is currently under consideration. Dr. Juckett's work, including his experience with DOE as well as private industry, has demonstrated his ability to serve on this committee.

Presently, the Department of the Interior (DOI) is in the process of making preliminary recommendations for membership on this sixteen member advisory committee. We will continue to work with DOI to make a final recommendation to the President for this important appointment.

Thank you for your interest in this national program.

Sincerely,

A handwritten signature in dark ink, appearing to read "James G. Randolph", is written over the typed name and title.

James G. Randolph
Assistant Secretary for Fossil Energy

cc:
Dr. D. Allan Bromley
Dr. Dallas Peck

August 4, 1992

PRESIDENT*

Morris W. Leighton
Illinois State Geological Survey
121 Natural Resources Bldg.
615 E. Peabody Dr.
Champaign, IL 61820
Phone: 217-333-5111
FAX: 217-244-7004

PAST PRESIDENT*

Robert H. Fakundiny
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Phone: 518-474-5816
FAX: 518-473-8469

PRESIDENT-ELECT*

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Mineral Industries
Suite 965
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Portland, OR 97232
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FAX: 503-731-4066

VICE PRESIDENT*

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and Geologic Survey
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Phone: 717-787-2169
FAX: 717-772-2291

SECRETARY-TREASURER*

Walter Schmidt
Florida Geological Survey
903 W. Tennessee St.
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Phone: 904-488-4191
FAX: 904-488-8086

EXECUTIVE COMMITTEE MEMBERS*STATISTICIAN**

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HISTORIAN

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Iowa Geological Survey
123 N. Capitol St.
Iowa City, IA 52242
Phone: 319-335-1575
FAX: 319-335-2754

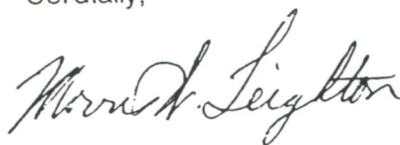
The Honorable James D. Watkins
Secretary of Energy
Forrestal Building, Room 7A-257
1000 Independence Ave., SW
Washington, DC 20585

Dear Secretary Watkins:

The recently passed National Geologic Mapping Act of 1992, Public Law 102-285, specifies that, "The President shall appoint one representative each from the Environmental Protection Agency, the Department of Energy, the Department of Agriculture, and the Office of Science and Technology Policy" to a sixteen-member geologic mapping advisory committee to advise the Director of the United States Geological Survey on planning and implementation of the geologic mapping program. In furtherance of the purposes of this Act, our Association of American State Geologists, representing the State Geological Surveys, wishes to recommend for your consideration Mr. Donald A. Juckett, Director, Office of Geoscience Research, U.S. Department of Energy, as a nominee to serve as a member on the geologic mapping advisory committee.

Mr. Juckett's professional knowledge, leadership qualities, and demonstrated administrative abilities uniquely qualify him for this assignment. We ask that he be given serious consideration as the President's appointee to this vital and distinguished committee, one that will help guide the development of basic geologic mapping in the scale required to assist the nation in economic development and environmental protection. The implementation and administration of the National Geologic Mapping Act will require the careful and insightful stewardship that Mr. Juckett can provide.

Cordially,



Morris W. Leighton
President

XC: Dr. D. Allan Bromley
The Assistant to the President for
Science Technology and Director,
Office of Science & Technology Policy
Dr. Dallas Peck, Director USGS

"Document Control"

TYPE: INFORMATION

DOCUMENT NUMBER: 9203068

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: SCHRIESHEIM, Alan: ARGONNE NATIONAL LABORATORY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/05/92

SUBJECT: RE: THE POSITION OF ENVIRONMENTAL COMPLIANCE OFFICER
WITHIN THE LAB.

DIRECTORATE
ASSIGNED:

STAFF
ASSIGNED:

ACTION
REQUIRED:

STAFF
ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE:
DATE COMPLETED:

STAFF DUE DATE
DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #:

CONTACT PERSON:
PHONE:

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REMARKS:

OSTP RECEIVED: 10/07/92
FILE: ENVIRONMENT

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CENTRAL FILES:

FAX: _____ MAIL: ☒

OSTP #: 9203068

Date of Correspondence: 10/5/92

Date of Receipt of Correspondence: 10/7/92

From: Alan Schriesheim

Affiliation: Director

Argonne Nat'l Lab

Subject: regarding the position of Environmental Compliance
Officer ~~at~~ the Lab
within

Action:

FYI: ☒

Assign to: _____

Due Date: _____

Copies to: DAB

ARGONNE NATIONAL LABORATORY

9700 SOUTH CASS AVENUE, ARGONNE, ILLINOIS 60439 - 4832

Office of the Director

RECEIVED

708/252-3872

(FAX) 708/252-7923

92 OCT 7 PM 12:51

October 5, 1992

OSTP
MAIL ROOM

Dr. D. Allan Bromley
Assistant to the President for Science and Technology
Executive Office of the President
Washington, D.C. 20506

Dear Allan:

I was pleased to hear you found your visit to the Laboratory worthwhile. It's always good to "kick a few tires."

I've followed activity with regard to the Environmental Compliance Officer position in the Environment, Safety and Health/Quality Assurance Oversight organization with Dr. Dennis C. Parzyck, Assistant Laboratory Director. This position was filled by an internal female candidate with excellent credentials. Dennie personally met with Neeloo to give her his decision and answer any questions she had about the selection process. During that conversation, Neeloo requested that Dennie circulate her resume to senior managers in the Environment, Safety and Health Division and the Environment and Waste Management Program. This was done the following day, and we are pursuing this avenue with those senior managers.

Dennie had a number of outstanding candidates from which to choose, and he selected a person with extensive experience with the Environmental Protection Agency. I am confident that he provided Neeloo every consideration.

Thanks for your invitation to dine at the White House Mess. I'll take you up on that generous offer!

Best personal regards,

Alan Schriesheim
Director

AS:frc

c: D. C. Parzyck

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9202964
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: CLUTTER, Mary E.: NATIONAL SCIENCE FOUNDATION

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 09/30/92

SUBJECT: SHE IS FORWARDING A MEMORANDUM REGARDING SUPPORT OF
ENVIRONMENTAL BIOLOGY RESEARCH BY THE U.S.
GOVERNMENT.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
LIFE SCIENCES
ENVIRONMENT

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PHONE: EXT:
REMARKS:

OSTP RECEIVED: 10/01/92 DEPT RECEIVED:
FILE: P-ENVIRONMENT

CENTRAL FILES:

Allan —

I promised a status report before
the end of the fiscal year.

I am just barely squeezing
through.

Regards — and Happy New Year!

Mary

Document Originally
Attached to
Following Page

2967

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550



OFFICE OF THE
ASSISTANT DIRECTOR
BIOLOGICAL SCIENCES

September 30, 1992

Memorandum to Dr. D. Allan Bromley

Subject: Support of Environmental Biology Research by the U.S.
Government

Last November I made a presentation to PCAST on biodiversity in the context of the larger issue of environmental biology. Several questions related to current programs, fundamental knowledge needs, coordination across agencies and international activities emerged from our discussion. The purpose of this memorandum is to provide a status report on activities subsequent to the meeting.

Subcommittee on Environmental Biology

The first activity following the PCAST meeting was the formation of the Subcommittee on Environmental Biology under the FCCSET Committee on Life Sciences (CLSH) in January, 1992. Jim Mason asked me to chair it. Our first task was to identify and describe current Federal programs supporting environmental biology research. At present there is no coordinated review of these programs across agencies that reported a total investment in 1990 of more than \$379 million.

We have organized our analyses around two related themes: biodiversity and ecological processes. *Biodiversity* refers to (i) biotic inventories, surveys, and systematic biology; (ii) the set of ecological, genetic and behavioral processes that create and sustain biodiversity; and (iii) various approaches that support conservation of biological diversity and restoration of degraded habitats. *Ecological processes* stresses (i) the understanding of fundamental processes such as physiological and behavioral responses to environmental forcings, and (ii) consideration for biochemical and genetic mechanisms controlling processes in ecosystems that are subject to natural variations and human influences.

Data on Agency Activities

We have solicited information from agencies on FY 1991/1992 activities. No projections were obtained for FY 1993 and outyears, and the scope of the survey is not considered an interagency crosscut. The broad interest in environmental biology is reflected by the large number of agencies participating in the survey. At this point, eleven agencies have provided data, and for some of the cabinet departments, bureaus and services within departments also participated.

A scientific description of research supported on environmental biology was requested. Also, information was requested on: purpose of research (motivating factors), expected products, level of effort (FY 1991/1992 funds), and performer (in-house, Federal labs, universities, etc.)

While we do not have final submissions from all agencies, some interesting points have emerged. I should point out that we have had enthusiastic support from all agencies, especially those representatives working on the subcommittee. What we are doing is seen as missing and sorely needed.

1. The Federal government's investment in "environmental biology" is larger than expected. Even with some potentially large datasets still in process, the investment in the FY 1991 period was over \$700 million. This exceeds, by nearly a factor of two, the estimate derived from data reported by agencies to NSF's Division of Science Resource Studies (SRS) which I reported to PCAST and to the CLSH (a total of \$379 million). Clearly, further examination is needed.

Next Step: We have begun discussions with SRS on how data are collected within agencies and transmitted to SRS, but it is clear that reconciling this matter is a longer term task.

2. For good reasons related to the mission of individual agencies, there are many ways that data on research are archived. While agencies worked conscientiously with the rather general taxonomy we selected, there are problems with interpretation, aggregation, and the like. However, it should be possible to reach consensus on a taxonomy that would make future data more directly comparable, and with little additional effort. There are many good reasons to develop such a taxonomy given the complexity of the issue and the continuing prominence of environmental questions before us.

Next Step: One of the group's recommendations should be to develop a taxonomy of environmental biology research that can be easily applied to all agencies. The goal of such a taxonomy should be to facilitate information flow and cooperation in sharing existing knowledge, identifying needed research and recommending joint programs where appropriate.

3. In the area of ecological processes, the category that appears to have the lowest level of support was physiological/biochemical ecology of organisms and associated genetic controls. This suggests a need to foster programmatic bridges between biochemical and genetic approaches and ecological approaches in order to develop a set of first principles that can be applied in prediction and extrapolation of research results beyond the limits of a single experiment.

4. "Habitat analysis" (here used to categorize the set of research activities needed to understand, manage and restore, as needed, a habitat resource) is not well supported, although some of this type of activity may be embedded in other categories. If further analysis reveals this to be truly neglected but important, then it might be a candidate for interagency action.

5. In contrast to the biomedical field, where the dominant research performers are scientists at colleges and universities, the pattern in environmental biology research is significantly skewed toward performance within agencies, or if performed outside the agencies, most support is allocated on the basis of formula funding or contracts. This raises issues related to resource allocation and the role of individual or groups of investigators at universities and colleges.

Next Step: Immediate plans are to proceed with this analysis, resulting in a published report from the subcommittee. These data should be instructive to several outside groups presently conducting analyses of the Federal effort in the area of the environment, as well as helpful to the agencies to better understand each other and to coordinate relevant activities.

Communication

We have established a liaison with the Committee on Earth and Environmental Science's Subcommittee on Global Change Research. We have received a briefing from the Executive Secretary of the NAS Committee on the Environment on activities of that group. As an outcome, we have agreed to review materials prepared by that committee describing Federal agency activities. Several of us have briefed other groups involved with analysis activities on environmental research, such as the Carnegie Commission on the Environment.

Next Step: We will brief CEES or relevant subcommittees, such as Global Change Research, on our findings by the end of November.

I will provide you with a complete report when this analysis has been completed.

Mary

Mary E. Clutter

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9203078
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: LAWSON, Richard L.: NATIONAL COAL ASSOCIATION

TO: DR. BROMLEY

DATE OF
CORRESPONDENCE: 09/30/92

SUBJECT: HE IS FORWARDING A COPY OF HIS LETTER TO SENATOR
PELL REGARDING THE INTERNATIONAL FRAMEWORK
CONVENTION ON CLIMATE CHANGE.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
ENVIRONMENT
PHYSICAL SCIENCES
PATRICK WHITE

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:
REMARKS:

OSTP RECEIVED: 10/07/92 DEPT RECEIVED:
FILE: P-ENVIRONMENT
CENTRAL FILES:

RICHARD L. LAWSON
President
(202) 463-2647

September 30, 1992

The Honorable Claiborne Pell
Chairman, Senate Foreign Relations Committee
446 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Mr. Chairman:

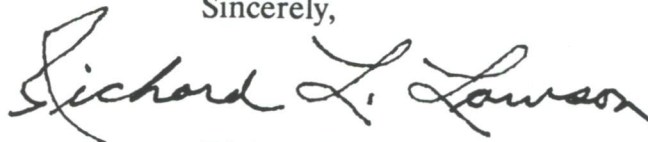
On Thursday, October 1, 1992, the Senate Foreign Relations Committee will consider an important resolution consenting to ratification, by the Senate, of the International Framework Convention on Climate Change. We urge you to support this resolution, without amendment, and to support favorable consideration by the Senate prior to adjournment next week.

The convention, as it was presented to the Senate, represents careful compromise among the 150 governments involved in its negotiation. It also clearly demonstrates the continued commitment, by the United States, to leadership in environmental protection. While important questions remain about how the Convention will be implemented by the United States and by other nations, it is a flexible document which will allow the United States and all countries to focus on environmental improvement without ignoring economic needs. More importantly, it sets the stage for additional scientific research and economic analysis. It lays groundwork for technological development and deployment of those technologies in areas of the world where they are most needed—the developing world.

Over 150 countries have signed the Convention since it was opened for signature in June. Prompt action by this Committee and then by the Senate will allow the United States to be the first OECD member to ratify the Convention and further demonstrate our nation's commitment to environmental leadership.

We urge you to support ratification without amendment.

Sincerely,



Richard L. Lawson

"Document Control"

TYPE: INFORMATION

DOCUMENT NUMBER: 9202966

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: dEL UNO, Carena: KENNEDY-WESTERN UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 09/23/92

SUBJECT: SHE IS FORWARDING A COPY OF DR. CURTIS A. GOLDEN'S
DOCTORAL DISSERTATION.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
LIFE SCIENCES
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REMARKS: PHONE: EXT:

OSTP RECEIVED: 10/01/92
FILE: P-ENVIRONMENT

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Kennedy-Western University
Park Center Pointe
1459 Tyrell Lane
Boise, Idaho 83706
208/375-4542
800/635-2900
Fax:208/375-5402

September 23, 1992

Dr. D. Allan Bromley, Asst to the President
Office of Science and Technology Policy
Executive Office Building
Washington, DC, 20506

Dear Dr. Bromley:

This bound Doctor's Dissertation on the need for and establishment of undergraduate degree environmental health programs is being sent to you by Kennedy-Western University at the request of

Dr. Curtis A. Golden
142 Milway Road
Irmo, South Carolina 29063.

Though all the written work on this dissertation was original with Dr. Golden, it was typewritten by a professional typist employed by the University. Unfortunately, the typing was not reviewed before this copy was bound; therefore, the University takes responsibility for any typing errors that might be present within the context of its pages.

Respectfully,

Carena del Uno
Registrar

THE NEED FOR AND ESTABLISHMENT
OF UNDERGRADUATE DEGREE
ENVIRONMENTAL HEALTH
PROGRAMS

by

Curtis A. Golden

A Dissertation submitted in partial fulfillment
of the requirements for the degree of

Doctor of Philosophy

Kennedy-Western University

March 1992

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9203007
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: QUIGLEY, Michael A.: INTERNATIONAL ASSOCIATION OF GREAT LAKES
RESEARCH

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 09/21/92

SUBJECT: HE IS WRITING TO ASK FOR FINANCIAL SUPPORT FOR THEIR
CONFERENCE TO DEFRAY THE COSTS FOR THE PANELISTS.

DIRECTORATE STAFF
ASSIGNED: ENVIRONMENT ASSIGNED:

ACTION STAFF
REQUIRED: AS NECESSARY ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 10/15/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: PHONE: EXT:

OSTP RECEIVED: 10/06/92 DEPT RECEIVED:
FILE: P-ENVIRONMENT
CENTRAL FILES:

3007

INTERNATIONAL ASSOCIATION FOR GREAT LAKES RESEARCH

2200 Bonisteel Boulevard
Ann Arbor, MI 48109-2099

Telephone: (313) 747-1673 FAX: (313) 747-2748

September 21, 1992

The Honorable D. Allan Bromley
Assistant to President for Science and Technology and Director,
Office of Science and Technology Policy
Old Executive Office Building
Washington, DC 20506

Dear Dr. Bromley:

The International Association for Great Lakes Research (IAGLR), established in 1967, has served as the focal point for compiling and disseminating multidisciplinary knowledge on North America's Laurentian Great Lakes and other large lakes of the world. IAGLR communicates this knowledge through publication of the Journal of Great Lakes Research (established in 1974) and through sponsorship of an Annual Conference on Great Lakes Research (begun in 1953). The Association's membership has grown from 225 scientists in 1968 to a 1991 membership of 800 scientists, engineers, resource managers and graduate students from the United States, Canada, and 20 other countries around the world.

During the week of June 6-10, 1993, IAGLR will hold its 36th Annual Conference on Great Lakes Research in Green Bay, Wisconsin. The 1993 Conference will feature a special Large Lakes Research Roundtable - a multidisciplinary forum where a panel of prominent scientists and resource managers will discuss recent advances and future initiatives in research on the world's large lakes (see enclosure).

The ultimate success of our Large Lakes Research Roundtable will depend on the quality and quantity of large lakes panelists we manage to attract. To encourage wide turnout, the Association plans to solicit \$20,000 in funds to cover travel expenses of approximately 10 panelists.

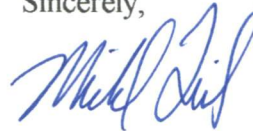
IAGLR is a 501 (c)(3) publicly-funded organization under IRS code, and I am now appealing for funds from a wide array of U.S. and international agencies and non-government organizations for coverage of travel expenses of our panelists.

Much progress has been made toward an increased scientific understanding needed to more effectively clean-up, manage, and protect our Great Lakes Ecosystem. Given our Nation's long-standing commitment to Great Lakes research, would you please consider providing funds to IAGLR to underwrite travel expenses of our Large Lakes Research Roundtable panelists?

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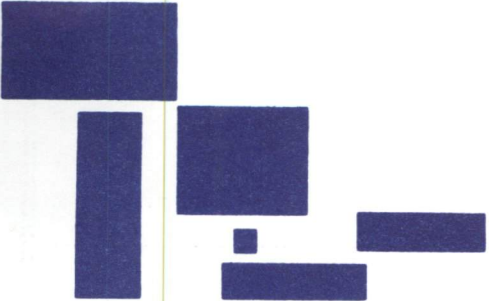
If you should require further information or assistance, please contact me at: (202)226-3504 (TEL); (202)226-0283(FAX); or email [M.Quigley (OMNET) or; Quigley@GLERL.GLERL.NOAA.GOV (INTERNET)]. Thanks very much.

Sincerely,



Michael A. Quigley
President

enclosures:



INTERNATIONAL ASSOCIATION FOR GREAT LAKES RESEARCH

Large Lakes Research Roundtable

36th Annual Conference
International Association for Great Lakes Research
Green Bay, Wisconsin, USA
June 6-10, 1993

The International Association for Great Lake Research (IAGLR) will sponsor a Large Lakes Research Roundtable as part of the Association's 36th Annual Conference to be held June 6-10 at St. Norbert College, DePere Wisconsin. The day-long Roundtable will be held on Tuesday, June 8, 1993 and will feature a morning plenary session where a multidisciplinary panel will discuss past progress and future needs for research and management to ensure protection and preservation of the Earth's large lake resources. Discussion will focus on assessing the role of scientific research in devising sustainable use management strategies for large lakes. The afternoon portion of the Roundtable will consist of a set of breakout sessions that will afford participants an opportunity to explore more specific areas within a research and management framework. Select topics will include toxic contaminant cycling, physical and biogeochemical processes, hydrology, exotic species, habitat protection and biodiversity, foodweb dynamics, water diversion and use, and climate and global change.

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For further information contact:

Dr. Alfred M. Beeton
Chair, IAGLR Large Lakes Roundtable
Great Lakes Environmental Research Laboratory
2205 Commonwealth Blvd.
Ann Arbor, MI 48105-1593, USA
TEL: (313) 668-2244
FAX: (313) 668-2055

INTERNATIONAL ASSOCIATION FOR GREAT LAKES RESEARCH

"Devoted to Research on the Large Lakes of the World"

- Objectives:** The promotion of all aspects of Great Lakes research and the dissemination of research information through publications and meetings.
- Conferences and journal publications encompass all aspects of research applicable to the understanding of the world's large lakes and the human societies surrounding them.
- History:** 1953—First Conference on Great Lakes Research.
1966—Proposal adopted for the establishment of the International Association for Great Lakes Research (IAGLR).
1967—By-Laws adopted.
1974—Decision to replace the annual conference "Proceedings" with a quarterly journal.
1975—Publication of the first issue of the *Journal of Great Lakes Research*.
- Organization:** A nine-member Board of Directors is elected by the Association members to manage the affairs of the Association and provide long-term planning. Board members are elected for a three-year period and, in turn, elect a President annually.
- Other Activities:** IAGLR is accredited as a U.S. public charitable organization (Section 501(c)(3) IRS Code) and encourages tax-deductible contributions needed to promote and support scholarship, public education, and technical advisory initiatives pertaining to Great Lakes research. Prospective donors should contact: Executive Secretary, IAGLR Business Office, 2200 Bonisteel Blvd., Ann Arbor, Michigan USA 48109-2099.
- Publications:** The *Journal of Great Lakes Research* is a refereed journal which is published four times a year.
- The Journal is covered by 17 abstracting services including *Current Contents*, *Aquatic Sciences and Fisheries Abstracts*, *Biological Abstracts*, *Chemical Abstracts*, *Pollution Abstracts*, and *Selected Water Resources Abstracts*.
- Lakes Letter*, the Association newsletter, is published twice a year.
- Information on the availability and cost of Journal back issues may be obtained from the IAGLR Business Office, 2200 Bonisteel Blvd., Ann Arbor, Michigan, USA 48109-2099.
- Conferences:** IAGLR hosts an annual Conference on Great Lakes Research. The Conference is held during spring, alternating between locations in the USA and Canada. Information on the upcoming Conference is published in *Lakes Letter*.

IAGLR Membership Application

NAME _____

MAILING ADDRESS _____

_____ Zip Code _____

BUSINESS ADDRESS (If different) _____

_____ Zip Code _____

TELEPHONE (_____-_____) (Work) (_____-_____) (Home)

FAX or ELECTRONIC MAIL NETWORK and ADDRESS: _____

BACKGROUND INFORMATION (Individual Members)

Highest Academic Degree _____

Year _____ Institution _____

Degree Specialty _____

Current Area of Research _____

Professional Title _____

TYPE OF MEMBERSHIP (Multiple-Year Memberships Welcome)

Year Membership to Begin: 19____

Individual

- ☐ New (\$35 per year)
- ☐ Renewal (\$40 per year,
\$35 if paid before Jan. 1)
- ☐ Student (\$20 per year)
- ☐ Retired (\$15 per year)
- ☐ Life Member (\$500)

Corporate/Institutional

- ☐ Library (\$75 per year)
- ☐ Contributing (\$500 per year)
- ☐ Sustaining (\$1,000 per year)

Contribution to the Association \$ _____

FORM OF PAYMENT

☐ Check (Check No. _____)

☐ Cash

☐ Visa

☐ Mastercard

Card Number _____ Expiration Date _____

Authorized Signature _____

Date _____

Please return your check (payable to IAGLR) to Treasurer, IAGLR Business Office, 2200 Bonisteel Blvd., Ann Arbor, Michigan, USA 48109-2099.

All payments must be made in U.S. equivalent currency.

TYPE: ACTION

DOCUMENT NUMBER: 9202929

ORIGINATOR: 02

STATUS I

DIRECTORATE STATUS

FROM: PRESSLEY, Angela M.

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 09/21/92

SUBJECT: SHE IS WRITING TO REQUEST INFORMATION ON BECOMING A
METEOROLOGIST.

DIRECTORATE

STAFF

ASSIGNED: ENVIRONMENT

ASSIGNED:

ACTION

STAFF

REQUIRED: DIRECT REPLY

ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE: 10/03/92

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #:

CONTACT PERSON:

REMARKS:

PHONE:

EXT:

OSTP RECEIVED: 09/29/92

DEPT RECEIVED:

FILE: P-ENVIRONMENT

CENTRAL FILES:

2929

September 21, 1992

Science and Technology
Allan Bromley
White House Staff
1600 Pennsylvania Avenue
NW Washington D.C. 20500

Dear Mr. Bromley:

My name is Angela M. Pressley. I plan to begin my college education in January of 1993. My ultimate educational goal is to become a meteorology.

I am writing to you in hopes you can give me any information you might have in the field of meteorology.

I do plan to earn a master's degree in meteorology with the ambition of one day working for NASA.

I know only the best can hope to work for NASA, that is why I am writing to you.

I would like any information your staff could give me on my subject of interest. I need to know what courses and avenues I must take and obtain my career.

Thank you for your time and consideration to read my letter.

Sincerely,

Angela M. Pressley

Angela M. Pressley

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9203007
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: QUIGLEY, Michael A.: INTERNATIONAL ASSOCIATION OF GREAT LAKES
RESEARCH

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 09/21/92

SUBJECT: HE IS WRITING TO ASK FOR FINANCIAL SUPPORT FOR THEIR
CONFERENCE TO DEFRAY THE COSTS FOR THE PANELISTS.

DIRECTORATE STAFF
ASSIGNED: ENVIRONMENT ASSIGNED:

ACTION STAFF
REQUIRED: AS NECESSARY ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 10/15/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: PHONE: EXT:

OSTP RECEIVED: 10/06/92 DEPT RECEIVED:
FILE: P-ENVIRONMENT

CENTRAL FILES:

3007

INTERNATIONAL ASSOCIATION FOR GREAT LAKES RESEARCH

2200 Bonisteel Boulevard
Ann Arbor, MI 48109-2099

Telephone: (313) 747-1673 FAX: (313) 747-2748

September 21, 1992

The Honorable D. Allan Bromley
Assistant to President for Science and Technology and Director,
Office of Science and Technology Policy
Old Executive Office Building
Washington, DC 20506

Dear Dr. Bromley:

The International Association for Great Lakes Research (IAGLR), established in 1967, has served as the focal point for compiling and disseminating multidisciplinary knowledge on North America's Laurentian Great Lakes and other large lakes of the world. IAGLR communicates this knowledge through publication of the Journal of Great Lakes Research (established in 1974) and through sponsorship of an Annual Conference on Great Lakes Research (begun in 1953). The Association's membership has grown from 225 scientists in 1968 to a 1991 membership of 800 scientists, engineers, resource managers and graduate students from the United States, Canada, and 20 other countries around the world.

During the week of June 6-10, 1993, IAGLR will hold its 36th Annual Conference on Great Lakes Research in Green Bay, Wisconsin. The 1993 Conference will feature a special Large Lakes Research Roundtable - a multidisciplinary forum where a panel of prominent scientists and resource managers will discuss recent advances and future initiatives in research on the world's large lakes (see enclosure).

The ultimate success of our Large Lakes Research Roundtable will depend on the quality and quantity of large lakes panelists we manage to attract. To encourage wide turnout, the Association plans to solicit \$20,000 in funds to cover travel expenses of approximately 10 panelists.

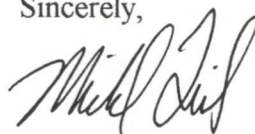
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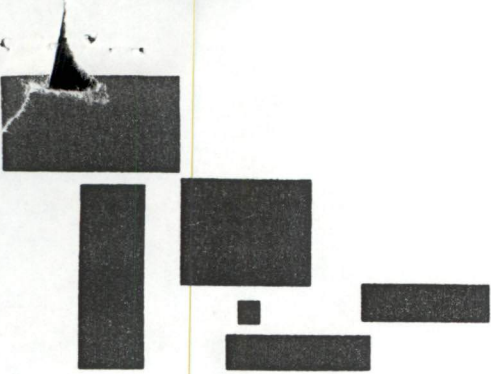
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Sincerely,

A handwritten signature in black ink, appearing to read "Michael Quigley", written in a cursive style.

Michael A. Quigley
President

enclosures:



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Large Lakes Research Roundtable

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Dr. Alfred M. Beeton
Chair, IAGLR Large Lakes Roundtable
Great Lakes Environmental Research Laboratory
2205 Commonwealth Blvd.
Ann Arbor, MI 48105-1593, USA
TEL: (313) 668-2244
FAX: (313) 668-2055

TYPE: ACTION
ORIGINATOR: 02

STATUS I

DOCUMENT NUMBER: 9202925
DIRECTORATE STATUS

FROM: FRANKLIN, Jerry F.: LONG-TERM ECOLOGICAL RESEARCH NETWORK

TO: DR. D.A. BROMLEY

SEP 29 1992

DATE OF
CORRESPONDENCE: 09/21/92

SUBJECT: HE IS OFFERING THEIR NETWORK AS A RESOURCE AS OSTP
CONSIDERS CRITICAL ENVIRONMENTAL POLICY ISSUES.

DIRECTORATE STAFF
ASSIGNED: ENVIRONMENT ASSIGNED:

ACTION STAFF
REQUIRED: AS/IF NECESSARY ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 10/12/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT: 12-3-92

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: ENCLOSURES TO ENVIRONMENT PHONE: EXT:

OSTP RECEIVED: 09/28/92
FILE: P-ENVIRONMENT

DEPT RECEIVED:

CENTRAL FILES:



THE WHITE HOUSE
WASHINGTON

December 3, 1992

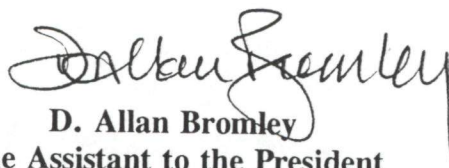
Dear Dr. Franklin:

Thank you for your letter and information regarding the Long-Term Ecological Research (LTER) Network. The LTER Network is well known as a strong program supported by a solid underpinning of superior research and excellent scientists.

I appreciate the offer of the Network and its scientists to assist the office with environmental policy issues. I have forwarded the information to Dr. Nancy Maynard, my Assistant Director for the Environment, and suggest you contact her during a future trip to Washington (202/456-6202).

Once again, thank you for forwarding the information, and I offer my congratulations for your fine work in this important area.

Sincerely yours,



D. Allan Bromley
The Assistant to the President
for
Science and Technology

Dr. Jerry F. Franklin
Chair
Long-Term Ecological Research Network
College of Forest Resources, AR-10
University of Washington
Seattle, Washington 98195



Long-Term Ecological Research Network

College of Forest Resources, AR-10
University of Washington
Seattle, Washington 98195

2925
LTER Network Office

Ph: 206-543-4853

Fax: 206-685-0790

September, 1992

Honorable D. Allan Bromley
Assistant to the President for Science and Technology
Old Executive Office Building
17th St. and Pennsylvania Ave. NW
Washington, DC 20506

Dear Dr. Bromley:

The Long-Term Ecological Research Network (LTER) is a national network of 18 research sites funded through the National Science Foundation's Biological Sciences Directorate. The Network represents ecosystems as diverse as the Chihuahuan desert of New Mexico, the tropical rain forest of Puerto Rico, the arctic tundra of northern Alaska, and the barrier islands off the Virginia coast. As a group of over 500 ecological scientists who design and conduct experiments on long-term ecological phenomena, we want you to be aware of the existence of the Network and its potential to provide information for environmental policy.

Enclosed are two items. First, a reprint from *BioScience* which provides an overview of the Network and its contributions to the field of ecological research. Second, a directory of sites which provides more detailed knowledge about the history, site characteristics, and current research programs, as well as future research directions for each component of the LTER Network. Site research typically documents patterns and frequency of disturbance (natural or human-caused) over varied time and spatial scales, identifies interactions between climate and evolutionary change or, more recently, compares and synthesizes common features among sites. With a network in place for communication and planning, a wide range of sites with common data protocols and technologies, and a meaningful peer review system to maintain quality, we have a greater opportunity to take a broader view of ecological science than most other research programs.

Many of the LTER sites are on federal lands, and much of the research is conducted in cooperation with scientists from other national research networks. These include the U.S. Department of Energy Research Parks, the U.S. Department of the Interior National Park Service and Fish and Wildlife Service, the U.S. Geological Survey, the Environmental Protection Agency, the U.S. Department of Agriculture Forest Service and Agricultural Research Service, and the National Oceanic and Atmospheric Administration.

As both scientists and educators, we want to understand the long-term problems affecting the nation's environments, and contribute to long-term solutions. To that end, we offer ourselves and our network as a resource as you consider critical environmental policy issues. Please contact the relevant lead scientist listed in the table on page 168 of the enclosed book for further information on a particular site. I am also available to discuss any aspect of the LTER Network and may be contacted through the Network Office at 206-543-4853. I make frequent trips to Washington, D.C., and could arrange to meet with you or your staff at your convenience.

Sincerely yours,

Jerry F. Franklin
Chair, LTER Network



NETWORK NEWS

IN THIS ISSUE:

NSF Changes / 3
Research in Israel / 9
Kellogg Station / 10
Konza Prairie / 12
Smithsonian Research / 14
Publications / 16

Newsletter of the Long-Term Ecological Research Network

Spring/Summer 1992, Issue 11

Synthesis in LTER

Synthesis is more than pulling things together: it is also the search for new generalization and new theory

Synthesis is a tradition in the ecological sciences. In LTER we have a greater opportunity to take a broader view than almost any other ecological research program. We have both the challenge and the facilities to cross traditional barriers to more holistic thinking and generalization. We can synthesize across ecosystems so disparate that, owing to differences in the schooling of their scholars, synthesis has been inhibited between forest and grassland ecology, limnetic and lotic aquatic ecology, and aquatic, freshwater, marine and terrestrial ecology. We can synthesize across a wide variety of streams or forests scattered across the continent and beyond. We can evaluate species in a population context, a community context, an ecosystem context, a landscape context, or all of these. The possibilities seem open-ended, and may be limited only by our creativity or resolve to take advantage of a unique opportunity. Synthesis is more than pulling things together: it is also the search for new generalization and new theory.

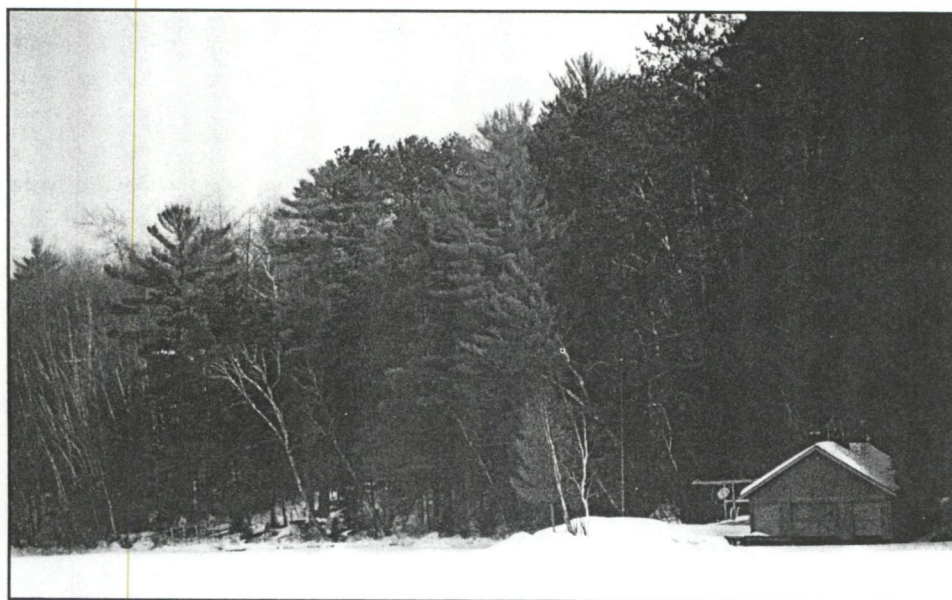
There are a number of scientific, social and administrative realities of the LTER Program that have created this opportunity. On the science side, we carry out synthesis on data from our own projects, we are asking similar questions in a wide variety of landscapes, we have similar sets of measurements in the same core areas, such as primary production, biogeochemistry, and fluctuations in populations. We have accessible data which, after due acknowledgement to individual scientists, is common property. On the social side, we routinely talk and walk and dine with ecologists different from ourselves; our association causes us to pay attention to a broader array of areas, topics and scientific ideas. On the administrative side, we have a network for communication and planning, a meaningful peer review system to maintain quality, and some common funding to apply new technologies.

At the winter 1992 Coordinating Committee meeting at Trout Lake, Wisconsin in a session we co-chaired, site

representatives reviewed recent explorations in synthesis and considered future activities. We were interested in learning what features of LTER or our recent efforts have contributed to or detracted from synthesis, and what new ideas might emerge. Current synthesis efforts include work in the areas of:

■ **Process Studies.** Synthesis across LTER projects includes the processes of decomposition, biogeochemistry of soils, and terrestrial net primary production.

■ **Climate Forcing.** Climate change is a reasonable forcing function for testing the reality of



JERRY F. FRANKLIN

South shore of Trout Lake, near the University of Wisconsin's research station in north central Wisconsin. Location of the North Temperate Lakes LTER site.

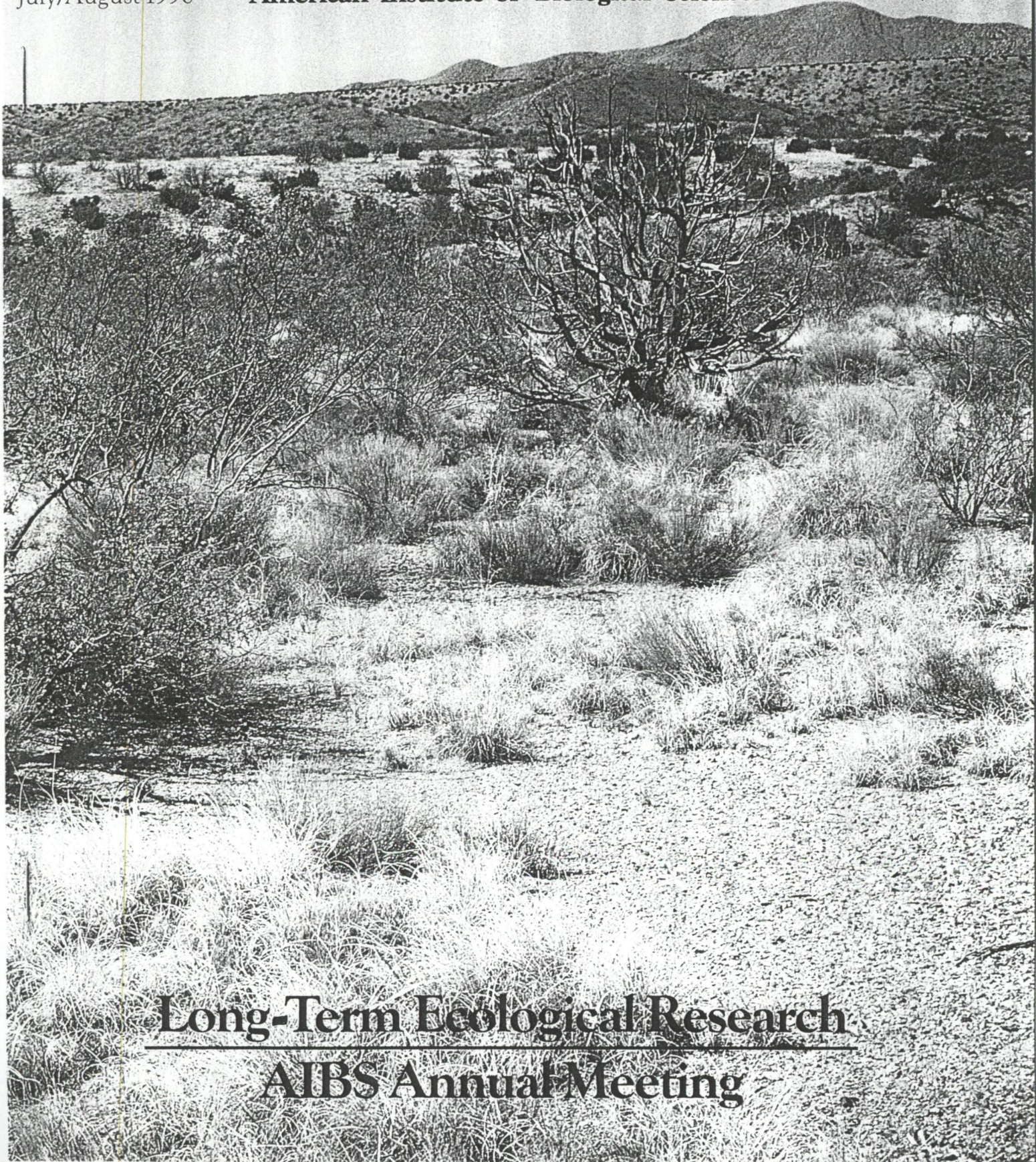
See Page 2

BioScience

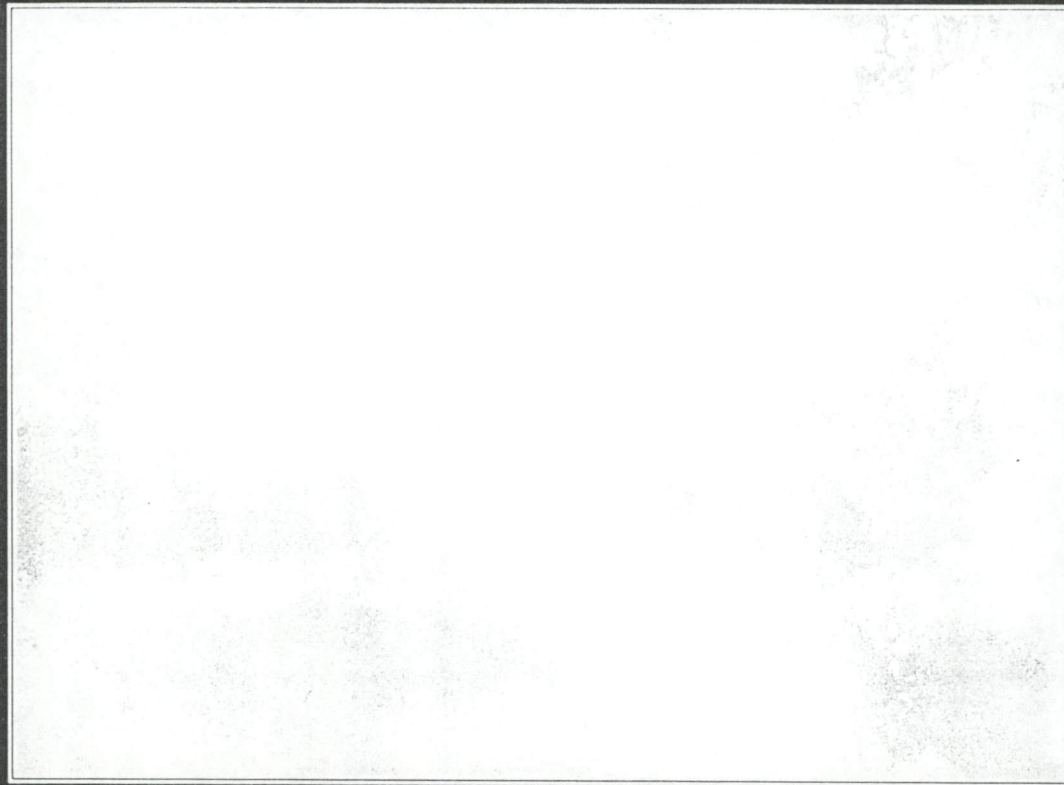
July/August 1990

American Institute of Biological Sciences

Vol. 40 No. 7



Long-Term Ecological Research
AIBS Annual Meeting



LONG – TERM ECOLOGICAL RESEARCH IN THE UNITED STATES



**A Network of Research Sites
1991**

*Sixth Edition Revised, LTER Publication No. 11
Long-Term Ecological Research Network Office, Seattle, Washington*

TYPE: ACTION DOCUMENT NUMBER: 9202929
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS C

FROM: PRESSLEY, Angela M.

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 09/21/92

SUBJECT: SHE IS WRITING TO REQUEST INFORMATION ON BECOMING A
METEOROLOGIST.

DIRECTORATE STAFF
ASSIGNED: ENVIRONMENT ASSIGNED:

ACTION STAFF
REQUIRED: DIRECT REPLY ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 10/03/92 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT: 01/08/93

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:
REMARKS: Unable to respond; no return address included in letter.
Response resent 1/8/93.

OSTP RECEIVED: 09/29/92 DEPT RECEIVED:
FILE: P-ENVIRONMENT
CENTRAL FILES:



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

January 8, 1993

Dear Ms. Pressley:

On behalf of Dr. Bromley, thank you for your letter of September 21, regarding your plan to become a meteorologist. Meteorology is an exciting field, and I encourage you to pursue a solid educational path toward a career in that area.

For information on study programs at NASA in meteorology, I suggest you contact:

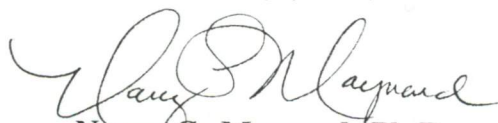
Mr. Frank C. Owens
Director, Education Division
Office of Human Resources and Education
Federal Office Building 6, Room 6051
400 Maryland Avenue, SW
Washington, DC 20546
(202) 453-1110

In addition, you should contact the National Meteorological Center located within the Department of Commerce. The Director of that office is:

Dr. Ronald D. McPherson
5200 Auth Road
Washington, DC 20233
(301) 763-8016

Enclosed for your information is the document Predicting Our Weather. I wish you the best of luck in school.

Sincerely yours,



Nancy G. Maynard, Ph.D.
Assistant Director
for
the Environment

Ms. Angela M. Pressley
5601 Hollyhock Lane
Bossier City, LA 71112

2424

September 21, 1992

Science and Technology
Allan Bromley
White House Staff
1600 Pennsylvania Avenue
NW Washington D.C. 20500

Dear Mr. Bromley:

My name is Angela M. Pressley. I plan to begin my college education in January of 1993. My ultimate educational goal is to become a meteorology.

I am writing to you in hopes you can give me any information you might have in the field of meteorology.

I do plan to earn a master's degree in meteorology with the ambition of one day working for NASA.

I know only the best can hope to work for NASA, that is why I am writing to you.

I would like any information your staff could give me on my subject of interest. I need to know what courses and avenues I must take and obtain my career.

Thank you for your time and consideration to read my letter.

Sincerely,

Angela M Pressley

Angela M. Pressley