May 10, 2005

MEMORANDUM

TO: Stephen Halperin  
   Dean, College of Computer, Mathematical and Physical Sciences

FROM: Victor Korenman √  
   Associate Provost for Academic Planning and Programs

SUBJECT: Proposal to Change the Name of the Department of Meteorology to the Department of Atmospheric and Oceanic Science (PCC Log No. 04059)

Chancellor Kirwan has approved changing the name of the Department of Meteorology to the Department of Atmospheric and Oceanic Science. Correspondingly, the existing M.S. and Ph.D. programs in Meteorology will be changed to M.S. and Ph.D. in Atmospheric and Oceanic Science. Enclosed are copies of the letters from the Chancellor and a copy of the approved proposal. The change is formally effective April 15, 2005.

Students graduating from the program during this Summer or thereafter may have the new program name appearing on their transcripts and diplomas; this is not possible for students graduating this Spring. Students already enrolled in the program may receive their degrees in Meteorology if they choose to do so.

VK:sfm
Enclosure

Cc: Dr. Sylvester J. Gates, Chair, Senate PCC  
    Ms. Sarah Bauder, Student Financial Aid  
    Dr. Mary Giles, University Senate  
    Ms. Barbara Hope, Data Administration  
    Ms. Trudy Lindsey, Graduate Studies  
    Dr. Phyllis Peres, Undergraduate Studies  
    Ms. Anne Turkos, Archives  
    Dr. Scott Wolpert, College of Computer, Mathematical and Physical Sciences  
    Dr. Linda Yokoi, Records & Registrations
April 29, 2005

Dr. C.D. Mote, Jr.
1101 Main Administration Building
University of Maryland, College Park
College Park, MD 20742

Dear Dan:

Thank you for forwarding the request from University of Maryland, College Park to change the existing M.S. and Ph.D. programs in Meteorology to M.S. and Ph.D. in Atmospheric and Ocean Science. I am delighted to approve this change. Please express my appreciation to departmental faculty for their careful work in planning for this change.

Sincerely,

William E. Kirwan
Chancellor

cc: Dr. Irwin Goldstein
    Dr. Gertrude Eaton
    Dr. William Destler
    Dr. Victor Korenman
    Dr. David Sumler
April 15, 2005

Dr. C.D. Mote, Jr.
1101 Main Administration Building
University of Maryland, College Park
College Park, MD 20742

Dear Dan:

Thank you for forwarding the request from University of Maryland, College Park to change the name of the Department of Meteorology to the Department of Atmospheric and Oceanic Science. I am delighted to approve this change. Please express my appreciation to departmental faculty for their careful work in planning for this change.

Sincerely,

William E. Kirwan
Chancellor

cc: Dr. Irwin Goldstein
Dr. Gertrude Eaton
Dr. William Destler
Dr. Victor Korenman
April 4, 2005

Chancellor William E. Kirwan
University System of Maryland
Elkins Building

Dear Chancellor Kirwan:

The College of Computer, Mathematical, and Physical Sciences has proposed that the name of its Department of Meteorology be changed to the Department of Atmospheric and Oceanic Science. Correspondingly, it proposes that the existing M.S. and Ph.D. programs in Meteorology be similarly changed to M.S. and Ph.D. in Atmospheric and Oceanic Science. The proposed name would better reflect the academic training students receive in the department's graduate programs and the research activities of its faculty and students. The word "Meteorology" has come to be associated with weather forecasting only, which is a very small part of the interests of the department.

The proposal has been endorsed by all of the appropriate faculty and administrative committees concerned and was approved by the College Park Senate at its meeting on April 4, 2005.

I accept this recommendation and ask that you approve the change in name of the Department of Meteorology and of its graduate programs to Atmospheric and Oceanic Science. Once the program name changes have been approved, I request that you so inform the Maryland Higher Education Commission so that they may adjust their program inventory accordingly.

Yours sincerely,

[Signature]

E. D. Mote, Jr.
President

CDM/vk
cc: William W. Destler, Senior Vice President for Academic Affairs and Provost
    Steve Halperin, Dean, College of Computer, Mathematical, and Physical Sciences
    Arthur N. Popper, Chair, University Senate
    Calvin Burnett, Secretary of Higher Education
THE UNIVERSITY OF MARYLAND, COLLEGE PARK
PROGRAM/CURRICULUM PROPOSAL

DIRECTIONS: Provide one form with original approval signatures in lines 1 - 4 for each proposed action. Keep this form to one-page in length. Forms and appropriate attachments should be submitted to the Office of Academic Affairs, who will assign a Log Number to each proposal. Also submit an electronic version of as much of the proposal as is possible.

DATE SUBMITTED__

PCC LOG NO. 04 00 0

COLLEGE/SCHOOL_CMPS_

DEPARTMENT/PROGRAM_Meteorology

PROPOSED ACTION (A separate form for each) ADD____ DELETET____ CHANGE__

DESCRIPTION (Provide a succinct account of the proposed action. Details should be provided in an attachment. Provide old and new sample programs for curriculum changes.)

Change name of Department of Meteorology to Department of Atmospheric and Oceanic Science

JUSTIFICATION/REASONS/RESOURCES (Briefly explain the reason for the proposed action. Identify the source of new resources that may be required. Details should be provided in an attachment.)

attached

APPROVAL SIGNATURES

1. Department Committee Chair Upton 1/30/05
2. Department Chair B. Dieters 1/25/05
3. College/School PCC Chair Andy 2/23/05
4. Dean Scott Wolpert 2/23/05
5. Dean of the Graduate School (if required) Ann Swift March 15, 2005
6. Chair, Senate PCC W. Krumhansl 3/15/05
7. Chair of Senate ____________ 4/1/05
8. Vice President for Academic Affairs & Provost W. Krumhansl 5/1/05

VPAAP Rev. 3/1/04
Proposal to change the name of the Department of Meteorology (DM) and the M.S. and Ph.D. Programs in Meteorology to Department of Atmospheric and Oceanic Science (DAOS) and M.S. and Ph.D. Programs in Atmospheric and Oceanic Science

January 20, 2005

Overview and rationale

This is a request to change the name of the “Department of Meteorology” to the “Department of Atmospheric and Oceanic Science”. Correspondingly, the current Ph.D. and M.S. graduate programs in Meteorology will be changed to Atmospheric and Oceanic Science Programs. The reason for the request is to provide a name that accurately reflects the broadened nature of our field and especially the new strengths of our Department. The depth of our determination is reflected in the fact that we originally made this request seven years ago, repeated the request in 2001, and now after curriculum revision, new hires to address concerns expressed earlier, and with the unanimous vote of the Department faculty, we resubmit our request.

Here in support of our proposal we review the growth of the Department and the affiliated Earth System Science Interdisciplinary Center (ESSIC) covering the topics of research, education, and community service. We then discuss how our proposed name change reflects our breadth of research and training, reflects similar name-changes in peer departments, and impacts our relationship to other campus programs.

Research Our research activities cover a broad range of topics including global climate change, physical oceanography, air-sea interaction, clouds and radiation, atmospheric chemistry and air pollution, numerical weather prediction and data assimilation, and severe storms.

Our faculty hires since the 1997 request clearly reflect this diversity. Professor Eugenia Kalnay’s interests are in atmosphere-ocean predictability and data assimilation, Professor Zhanqing Li’s interests lie in innovative uses of remote sensing over land and ocean, Professor Ning Zeng’s interests lie in modeling the coupled earth system, Sumant Nigam’s in atmosphere-ocean exchanges and climate, while Professors Tony Busalacchi and Ragu Murtugudde are a world-renowned oceanographers with broad interests in physical oceanography and biogeochemical cycles.

Staff with Department/ESSIC affiliations include Phil Arkin, a leading authority on freshwater flux estimation, Joaquim Ballabrera, who has done pioneering research in ocean data assimilation, John LeMarshall, also head of the National Oceanic and
Atmospheric Administration (NOAA)’s Joint Center for Satellite Data Assimilation, Dimtry Chalikov, who is intimately involved in numerical model development, Rong-Hua Zhang, a physical oceanographer who has published extensively on interannual to decadal changes in the ocean, Ken Pickering, renowned expert in marine convection, and Tom Smith, author of the standard Reynolds and Smith analysis of sea surface temperature.

In our Department as well we have Professor Jim Carton, who has been a leading figure in studies of the climate of the tropical Atlantic for many years and is the author of the standard reanalysis of historical ocean circulation, Kostya Vinnikov, Semyon Grodsky and Gennady Chepurin, leading scientists trained in the former Soviet Union, whose achievements span broad areas of human-induced climate change, remote sensing, and diagnostic studies of the physics of the ocean. Russ Dickerson is an expert in the chemistry of the marine boundary layer. Gene Rasmusson is a world’s authority on ENSO and tropical climate variability, while Roxana Wajsowicz is a theoretical oceanographer interested in problems of fundamental geophysical fluid dynamics.

Finally, with respect to the extent of our research activities, we note that the groundbreaking has already begun for the move of NOAA’s National Centers for Environmental Prediction to the campus. Collocated with ESSIC, NCEP is the Nation’s premiere weather and climate prediction center. This massive research and applications organization further broadens opportunities for education and research through the Department.

**Education**

Our effort to change the name of the Department reflects the changing interests of our courses, students, and the names chosen by our peer organizations.

Our coursework underwent a major restructuring, approved by the University in 2002 (PCC log # 01014). The restructuring shifted our coursework from the traditional presentation of meteorological subjects toward a much broader presentation of the physics and chemistry of the atmosphere and oceans. Changes included introducing a two-semester required sequence in the dynamics of oceans and atmospheres, required course on the general circulation of the atmosphere and ocean and on understanding the Earth as a coupled system, so that in addition to the classical studies of the water and energy cycles the students will now understand the carbon cycle and other important elements. Other courses cover such topics as the construction of models of interactions within physical and biogeochemical systems. The innovative character of our new curriculum was highlighted in an editorial comment in the journal *Science* in May, 2003.

The changes in the curriculum are being reflected in changes in the research interests of our graduate students. Our Department currently has 52 graduate students. Many of the advanced students have some aspect of interdisciplinary science as part of their research and at least nine of our doctoral students are carrying out or completing theses with major emphasis on the oceans or ocean-atmosphere exchanges.
The changes in our interests are also reflected in the growing strength and collaborations between our Department and ESSIC, the Departments of Geology, Chemistry, and Geography, the program in Applied Mathematics and Scientific Computation, the Chemical Physics Program, and the School of Engineering. The proposed change of name will better reflect the breadth of these collaborations.

Service
Members of the Department are actively involved in service to the international scientific community in the broad areas of atmospheric and oceanic science. The faculty includes current Editors of two premier journals, the *Journal of Geophysical Research – Oceans* and the *Journal of Climate*, the president of international CLIVAR, the main scientific organization for physical climate research, and a member of the board of US CLIVAR, members of steering committees for experimental programs such as *Surface Ocean - Lower Atmosphere Study* (SOLAS), the *Indian Ocean Experiment* (INDOEX), the *African Monsoon Multidisciplinary Analyses* (AMMA), the *Atlantic Marine ITCZ* (AMI), many NASA satellite missions including *JASON*, *QuikSCAT*, *MODIS*, *Aquarius*, and *TRMM*. Many faculty have served, or are serving within agencies such as the National Science Foundation, and on relevant boards and panels of, for example, the National Research Council (including the *Climate Research Committee Board on Atmospheric Sciences and Climate*).

Names of Peer Departments
The faculty feels strongly that the name “Atmospheric and Oceanic Science” better describes our broadening intellectual and academic goals and is more likely to attract potential students towards our strengths. In contrast the name “Meteorology”, refers primarily to topics of weather and weather forecasting. Both from an etymological and from a current-usage prospective the word does not describe the breadth of teaching, research, and service done in this department.

In recent years the changes occurring in research and training has caused most of the strong departments in our field to undergo similar changes of name (see Table 1) in order to have a name that is truly descriptive. Indeed, besides our Department, the only peer departments still using the name “Meteorology” (Penn State, FSU, and Oklahoma) are also the only departments known to be strongly focused on weather forecasting and synoptic meteorology. Use of this name by our Department tends to mislead potential students about our real strengths.

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1 In contrast, the term “meteorology” has developed a more narrow definition. *Funk and Wagnalls Dictionary* (1989) defines meteorology as “The science that deals with the atmosphere and its phenomena and esp. weather and weather forecasting.” *Merriam Webster* (online edition [http://www.m-w.com](http://www.m-w.com), August, 2001) defines meteorology as “1: a science that deals with the atmosphere and its phenomena and especially with weather and weather forecasting, 2: the atmospheric phenomena and weather of a region.” *Dictionary.com* ([http://www.dictionary.com](http://www.dictionary.com), August, 2001) defines meteorology as “The science that deals with the phenomena of the atmosphere, especially weather and weather conditions.”
Table 1  Names of strong departments/programs in our field.

<table>
<thead>
<tr>
<th>University</th>
<th>Department new name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIT</td>
<td>Department of Earth, Atmospheric, and Planetary Sciences.</td>
</tr>
<tr>
<td>Johns Hopkins</td>
<td>Department of Earth and Planetary Sciences</td>
</tr>
<tr>
<td>Univ. Wisc.</td>
<td>Department of Atmospheric and Oceanic Sciences</td>
</tr>
<tr>
<td>FSU</td>
<td>Separate Departments of Meteorology and Oceanography</td>
</tr>
<tr>
<td>Univ. Mich.</td>
<td>Atmospheric, Oceanic, and Space Sciences</td>
</tr>
<tr>
<td>Princeton</td>
<td>Program in Atmospheric and Oceanic Sciences within Dept of Geosciences</td>
</tr>
<tr>
<td>Penn. State</td>
<td>Meteorology</td>
</tr>
<tr>
<td>Univ. Miami</td>
<td>Rosenstiel School of Marine and Atmospheric Sciences</td>
</tr>
<tr>
<td>Harvard</td>
<td>Department of Earth and Planetary Sciences</td>
</tr>
<tr>
<td>Colorado State</td>
<td>Program in Atmos. Oceanic Science</td>
</tr>
<tr>
<td>Univ. Wash.</td>
<td>Separate Dept.s of Atmospheric Sciences and College of Oceanography</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>School of Meteorology</td>
</tr>
<tr>
<td>McGill</td>
<td>Dept Atmospheric and Oceanic Sciences</td>
</tr>
</tbody>
</table>

Relationship to other campus programs

The program that is most directly interested and affected by our proposed name change is the Marine Estuarine and Environmental Sciences Program (MEES). Although MEES is a multi-campus program, it has a strong presence within the UMD College of Life Sciences. Among its many areas of specialty in biological and environmental science, MEES has an area of specialization in ocean sciences. This specialization has active involvement from a number of fine adjunct faculty from the Horn Point Marine Laboratory and the Chesapeake Biological Laboratory within the Center for Environmental Science (UMCES) as well as other UMCP departments, including Meteorology and Geology. Here we briefly summarize the history of discussions Meteorology has had with MEES and UMCES regarding the proposed name-change. We then list what we believe to be the key issues raised in these discussions, concluding with our response.

The Department of Meteorology’s initial proposal was submitted in the September, 1997 In November, 1997 we received a letter from the President of UMCES, Dr. Donald Boesch raising three concerns, 1) that he had the impression there were few ocean scientists on the faculty of the Department, 2) that UMCES had many adjunct faculty who had prominent positions in several international programs (citing Coastal Physical Oceanography [CoPO] and the Consortium for Oceanographic Research and Education [CORE] as examples), and 3) and that MEES already had an ‘area of specialization’ in oceanography. We also received a letter from Dr. Paul Mazzocchi, then Dean of Life Sciences, whose response was that the name we chose (Department of Atmospheric and
Oceanic Science) was too broad. In a subsequent email Dean Mazzochi pointed out that our Department does not compare in scope with the Scripps Institution of Oceanography. He suggested an alternative name, ‘Department of Atmospheric and Physical Oceanographic Science’. Because more discussion seemed necessary, the original proposal was tabled.

In 2002 the proposal was resubmitted. At that time extensive additional meetings occurred and a first step toward coordinating ocean sciences was proposed to be the creation of a multi-department, cross-campus Institute of Oceanography within the University of Maryland System that would include our Department as a partner. Meetings were chaired by Dr. Mike Roman, Director of UMCES/Horn Point Environmental Laboratory and consensus was reached among members of the UMCP Departments of Chemistry, Geology, Meteorology, MEES, and the CES Horn Point and Chesapeake Biological Laboratories to develop the Institute as a department-, institute-, and campus- spanning entity (that is, it would not replace departments, but exist to facilitate coordination). We submitted the requested documents over a year ago to President Boesch and UMCP administrators. Unfortunately, to date the Institute of Oceanography has not developed.

Here we attempt to summarize the key issues that have been raised as a result of the previous two submissions, along with our response.

1) Lack of a significant ocean component within our Department. As indicated in the summary above, the Department has targeted most of its FTE hires during the past seven years toward the ocean sciences and climate including Professors Busalacchi, Murtugudde, Kalnay, Zeng, and Nigam. ESSIC has developed rapidly, greatly expanding the research faculty in ocean- and related sciences. Finally, the imminent arrival of NOAA/NCEP will provide an unprecedented level of additional expertise. This developing strength was highlighted in the recent flattering external review of the Department.

2) Lack of Prominence on International Committees such as CoPO and CORE. The Department faculty members do hold prominent positions on the key committees in international climate and large-scale ocean research as discussed on page 3. To repeat a single example, the Department includes current senior editors of the Journal of Climate and the Journal of Geophysical Research-oceans, and a former editor of the Journal of Physical Oceanography. These are the three most important journals in physical oceanography and climate. The Department has a similarly prominent presence in international science. The Department still does not participate in CoPO or CORE as these two committees do not address any of the Department objectives.

3) Our interests in the oceans duplicate activities within the MEES ‘area of specialization’ in oceanography. In reality there is only modest overlap between the research and academic activities of the MEES program and the Department. The Department focuses primarily on basin-scale processes and climate, with an emphasis on the physics of the oceans. UMCES scientists have their strengths in biological
processes and the estuarine and nearshore environment and indeed the vast majority of PhDs in the MEES program in the past five years have addressed biological topics. Scientists in the two organizations rarely compete for research funds or graduate students and generally do not attend the same specialty meetings. Our department home page refers students with coastal/biological interests to the MEES program.

4) **The name Department of Atmospheric and Oceanic Science is too broad, thus interfering with the identity of other programs.** The name was chosen to identify us as a member of our peer group of similar or lesser-sized programs (Table 1) to our target audience of students and colleagues at our peer institutions. For this target audience the name means that we have strengths in areas of atmospheric and oceanic science of relevance to studies of exchange processes, and climate in particular (the use of the singular form of the word ‘Science’ refers to the fact that we focus on processes involving both fluids). Such a name will help us attract students with interests in air-sea interaction, climate processes, and physical oceanography much more readily than ‘Meteorology’. We find the alternative ‘Department of Atmospheric and Physical Oceanographic Science’ awkward.

We do agree with Dr. Boesch that a name such as ‘Department of Oceanography’ would be too broad for us. The latter name would misidentify us as belonging in a peer group of the older set of large traditional oceanography schools at Scripps, Woods Hole, University of Rhode Island, University of Washington, and Texas A&M, all of which maintain separate specialties/departments in geology, chemistry, biology, and physics, and at least one ship. The scale of these traditional schools is more analogous to the proposed University of Maryland Institute of Oceanography than to a single UMCP department. Scripps, for instance, has 1,300 employees and a $146M/yr budget.

5) **Use of the word ‘Oceanic’ in our title has been preempted by its previous use elsewhere in UMCP.** A word search at the program website of the Maryland Higher Education Commission\(^2\) (MHEC) shows that the words ‘ocean’, ‘oceanic’, and ‘oceanography’, are not currently used in program names either at the graduate or undergraduate level in the State of Maryland.

Furthermore, with respect to key issue 4) we feel that our name must descriptive of the nature of our research and training even if the choice of words did overlap with some other department. We note that a reasonable level of collegiality prevails with regard to overlapping names of existing departments/programs. 153 programs use ‘computer’ in their titles, and 31 use the word ‘physics’. Within our campus there are Departments of Computer Science and Computer Engineering, a Department of Mathematics, and a Program in Applied Mathematics and Computational Science. We do not feel that the use of similar root words is a handicap for these programs, nor do we feel each is required to contain all specializations that might be encompassed by each word in their names (the word ‘computer’, for example, could imply AI,

\(^2\) [http://www.mhec.state.md.us/utilities/search_major.asp](http://www.mhec.state.md.us/utilities/search_major.asp), January, 2005
systems, theory, image processing, hardware, numerical analysis, software, networks, device physics, data bases, and many other topics).

**Required Resources**

As indicated above, no additional resources are required for the requested name change, since it will just reflect more accurately the real strengths and specialties of our Department, and be more appropriate for the new curriculum recently approved.