

## MEMORANDUM

6 October 2018

FROM: Peter C. Chu, Distinguished Professor and Chairman of Oceanography  
TO: Clyde Scandrett, Professor and Dean GSEAS  
SUBJ: RESPONSE TO JULY 2018 ACADEMIC PROGRAM REVIEW

The Department of Oceanography conducted an academic program review over the period 10-11 July 2018. The formal report from the external review committee was delivered 30 July 2018. This memorandum constitutes the Department's response to the major points raised by the review team.

The external review team was composed of three very eminent scientists from the field of physical oceanography. As the President of University Corporation for Atmospheric Research (UCAR) and member of the National Academy of Engineering, Dr. Antonio Busalacchi is a world well known physical oceanographer and climatologist. Dr. William Dewar is a highly recognized theoretical oceanographer and Pierre Welander Professor at the Department of Earth, Ocean, and Atmospheric Science, Florida State University. Dr. James Lynch is a senior scientist at the Woods Hole Oceanographic Institution, leader of underwater acoustics, and the Editor-in-Chief of the Journal of Acoustic Society of America. The superb quality and reputations of the external review team members made for a very useful review. Members of the OC Department very much appreciate the time devoted by the review team members and the willingness of the NPS administration to recruit and support them.

The review team's report focuses on the relevance and uniqueness of the Department's programs from both the research and teaching perspectives. The team members recognize that "the tenure track OC faculty are very good to excellent on an overall national level: competitive, determined, and still quite productive, and the research faculty in OC also play a large role in both research and education." However, the Committee found "a decidedly precarious OC Department on the verge of a downward trajectory, and at risk of losing key personnel and programs in a 3-5 year timeframe". "NPS is in severe danger of losing its existing expertise in Physical Oceanography, an outcome that would leave the Navy dependent upon civilian institutions to educate the officer corps in defense relevant areas." The OC Chair took the review comments very seriously and at the same time, he viewed it as the great opportunity to make the department stronger. He has worked hard with the support from the whole faculty and staff as well as Dean Clyde Scandrett and Military Associate Dean Col Timothy Sands of the NPS Graduate School of Engineering and Applied Science (GSEAS). He also scheduled a meeting with the Oceanographer and Navigator of the Navy and his staff on how to improve. After many efforts and meetings during the past two months (some meetings with Dean and Military Associate Dean), the OC faculty and staff have reached consensus to make the OC Department stronger again. The responses to the review comments are listed as follows, which were written by Professors Chu, Colosi, MacMahan, and Stanton, circulated to the whole OC faculty/staff for review on 28 September 2018, and approved by the whole department on 5 October 2018.

### **Strategic Planning for Faculty Recruit**

At the start of the OC external review, several problems arose from technical difficulties in presenting the department status and plans. Amongst these was confusion over current strategies for faculty recruitment. The committee saw indications that we were planning recruitment of a marine mammal acoustician from the previous review, then an extensive discussion about a modelling tenure track faculty member during overview the Research Overview session the next

morning. The evaluating committee correctly concluded that the department had not expressed a cohesive long term faculty recruitment plan. In fact, during this last year, the faculty has had several constructive and detailed meetings about both tenure-track and non-tenure track recruitment which are summarized below, each with a summary of the significant constraints we currently experience in these areas.

- (1) Tenure-Track Recruit: The current faculty salary payment plan imposed by the administration requires faculty to be strongly matched to course sections with at least 5 students in courses largely determined through curriculum reviews. While this is broadly appropriate, this constraint is more severe at NPS compared with most universities, and is exacerbated by a school-wide shortfall of teaching funds of over 20% every year for the last five years. Basically, our budget starts from way behind each fiscal year. Consequently in the last several years the department has made a great effort to very carefully right-size the tenure track faculty and match the faculty expertise to the required and elective courses. Consequently expanding the faculty by even one member decreases funds available to pay for the teaching load, currently by 1/6 th, even though there are expertise area that would greatly benefit from a new faculty recruit. As the committee noted, it is critical that the teaching fund base needs to be increased from the NPS Direct Teaching (DT) funding, and from external sources like the primary curriculum sponsors. This would immediately provide the flexibility, for example, of recruiting a regional or global ocean modeler. This could also be achieved through a retirement, but the very tight teaching budget precludes an immediate recruitment.
- (2) Non Tenure Track, Research Professoriate (Assistant through Full Research Professor): The OC research faculty continue to bring important expertise and resources to the department to cover the broad range of educational areas required by our sponsors. Recent retirements have resulted in a shrinking research faculty, diminished reimbursable support of our technical staff, and gaps in academic and technical expertise. Recruitment efforts for research faculty are hampered by the lack of any start-up funds, relocation funds, or research buffer funds, all of which could be raised from school foundation or indirect charge sources. These limitations are somewhat mitigated by very good laboratory and staging facilities and moderate indirect rates.

Despite the obstacles, the OC Department always actively to recruit a Research Professoriate. The OC Chair submitted a Request to Recruit a Research Faculty member to the NPS President through the chain of command on 27 November 2017. This request was quickly approved. The OC Department obtained eight applicants. After telephone interview, two applicants in the fields of numerical modeling and polar oceanography were invited to NPS for face-to-face interview in May 2018. The recent attempts at recruitment have not been successful primarily because of the lack of buffer or startup funds. The OC chair is working closely with the faculty, GSEAS Dean, Dean of Research to make the OC Department more attractive for recruiting new Research Professoriate.

***Action Item:*** *The OC Department needs to actively participate and to work together with other departments in the reform of the current NPS pay model in order to recruit and retain high quality faculty members both tenure-track and non-tenure track.*

### **Unclear of One Member Stationed in Hawaii**

The OC department Research Associate Professor Ben Reeder is indeed located in Hawaii, a situation which has both positives and negatives. The origin of this situation has a few facets. First Ben, being retired Navy, was identified as a uniquely qualified NPS faculty member to make connections to the operational Navy including working on a distance learning (DL) arrangement for enlisted, officers and civilians. His first year stationed in Hawaii he received few month salary from the Provost to work on such a DL program, but the effort lacked support from the broader NPS USW/OC faculty and was therefore abandoned. From this point on Ben has been functioning exclusively as a researcher. A second factor is that Ben and his wife adopted 3 children from China who all have various severe health issues, and there are aspects of the Hawaiian climate that are conducive to the kids well being. This last fact ties Ben firmly to the islands for the foreseeable future and so the question before the OC faculty has been: Do the positives of the arrangement outweigh the negatives? The ocean acoustics lab, which Ben is a part, considers the arrangement mostly positive. Ben is an active, engaging, well funded researcher and member of the acoustics community, and he brings considerable expertise to the laboratory in biological acoustics, ambient noise, shallow water and riverine acoustics. He helps teach our tactical oceanography course (offered twice a year) and he helps in the advising of masters level theses (usually as a co-advisor). The only down side of Ben is that his time in Monterey is limited. On average he has 5-7 week long trips to NPS, and we work together at Acoustical Society of America conferences and other workshops. With the turnover in OC faculty there may be renewed interest in re-examining a Hawaii DL program, and reengaging with the operational Navy.

*Action Item: The OC Department needs to enhance its mentoring system to make sure this remote job assignment to be NPS mission oriented.*

### **Balancing Coursework and Thesis Time:**

The review team noted from their own assessment of the METOC curriculum and based on interviews with faculty members that course requirements are much inflated compared with any other M.S. degree at civilian institutions. There are many reasons for this situation and some of them stem directly from the important unique aspects of the Navy's educational requirements. The team's report, however, goes beyond that reality to question whether or not the quality and positive impacts of the student's thesis experience are at risk by the current system. The report exhorts the Department and the NPS administration to consider ways to enhance the graduate education experience by strengthening the thesis experience.

This topic is important and timely. The Department will host a METOC curriculum by Rear Admiral Okon, Oceanographer and Navigator of the Navy in early December. This issue will be brought for his attention to create significantly more flexibility in the course offerings and to enhance the thesis experience.

*Action Items: 1) The OC Department needs to better articulate the role played by thesis activities in the educational program, 2) The Oceanography and Meteorology Departments together need to develop a creative new approach to intertwining educational skill requirement modules within portions of courses, within seminar series, within small, mentoring courses, and within e-week*

activities, and 3) *The NPS administration needs to work together with the departments to create a work load model that incorporates non-traditional education modules.*

### **Maintaining Research Faculty Capacity:**

The review team pointed out a serious concern shared by the Department with regard to what has been a loss of research faculty members over time. This loss has been coupled with a commensurate loss in overall capability and expertise, particularly with regard to sea going activities. Although NPS is not unique in this trend, the review team strongly noted that continued losses jeopardize the quality and uniqueness of the Department's programs. The numbers and health of research faculty are grouped together with overall capacity because a large proportion of research funding and staff support is created by the non-TT, research faculty. An important fraction of the expertise diversity is also carried by the research faculty. In short, the model for the OC Department's success over time and going forward is tied strongly to having a vibrant group of research faculty.

**Action Item:** *Continue planning in concert with the NPS Research Board and members of the NPS administration to create a program to recruit and retain quality research faculty.*

### **Preserving Technical Staffing:**

Related to at-risk capacity based on research faculty losses, the review team noted the difficulties faced by the Department with regard to retaining all of its highly skilled and experienced technical staff members. The review team found the OC Department lack of career guidance and supervision with a litany of long overdue and non-existent promotions and no guidance with respect to the performance expectations for their job classification.

The OC Department has started a monthly meeting between technical staff and faculty with the overarching goal to improve communication and structure, provide transparency and accountability, discuss deliverables, provide guidance, project workload expectations for the month, and evaluate previous workload expectations. The meeting notes and calendar of “key” workload events will be shared on a common website (e.g. Google Drive/Calendar). The first meeting was held August 28, 2018. All stakeholders stated that this type of monthly meeting is beneficial.

In addition, we have invited GSEAS Military Associate Dean and HR specialist to the OC Department meeting to describe the various GS-levels and to discuss the methods of promotion to both the faculty and technical staff. Note that the GS track for the technical staff differs from the AD track for teaching/research faculty.

**Action Items:** *(1) Keep the regular monthly faculty-staff communication meeting to enhance the career guidance and supervision with the advancement plan for each staff member both technical and administrative. (2) Continue to work with the GSEAS Dean to identify critical staff roles and responsibilities and to describe and stabilize staff mission funding, (3) Work with other GSEAS departments to more effectively share technical staff members where possible, and 4) Cross train existing technical staff members where possible.*

## **NPS Administration:**

The review team found that the NPS Administration also appeared resigned to living within a "BIS" (Butts In Seats) algorithm allocation of internal resources to departments and individuals, i.e. one based strictly on teaching load. The research faculty members do not get startup packages, nor bridge funding, and are also paid less per course taught than the tenured staff (22 vs. 33 days), the latter of which seems unfair.

The GSEAS Dean, Military Associate Dean, OC Chair, and OC Faculty (tenure-track and non-tenure track) are working together to change this situation. The GSEAS Dean and Military Associate Dean had several meetings with the OC faculty to discuss the problem and to understand the urgency to change the NPS pay model and the fair treatment to research faculty. The top NPS administration including the Provost, comptroller office, and HRO is working on a new pay model.

## **Upper Level Navy Management:**

Finally, the review team pointed that the OC research component especially is in danger of eroding quickly. Seagoing oceanographic research is quite expensive compared to most other research fields, and right now NPS OC is not receiving enough internal or external funds to sustain a nationally competitive program

The OC Department Chair had a very fruitful meeting with Dr. Christopher Ekstrom, the Deputy Oceanographer and Navigator of the Navy, CDR/Dr. Tim McGeehan (Deputy Technical Director), and Mr. Frank Baker (Deputy Executive Director) on the major issues raised in the OC Academic Program Review (APR).

Dr. Ekstrom had detailed discussion with Dr. Tony Busalacchi (UCAR President, representative of the Review Panel) after reading the APR report thoroughly many times. Dr. Ekstrom understands the NPS "BIS" (Butts in Seats) algorithm allocation problem (i.e., 4 course "nine month" model and minimum class size requirement), fully support the change of the NPS pay model from pure counting the course load to including the values of thesis research. He will bring this issue to the NPS administration during the scheduled METOC Curriculum Revive in early December.

Asking for sponsor resources such as ship time, chair professorship, and postdocs, Dr. Esktrom stated that the N2N6E only provides resources for 6.4 R&D work. N2N6E is not able to provide money such as ship time (\$300K/yr) for education purpose due to the "color" of the money (regulated by the Congress). A realistic way to get funds from N2N6E, we should submit a RDTE proposal with a transition plan (see attached FY19 R&D Guidance and the template for the transition plan). The ONR Arctic Chair Professor Program stirred the interests. CDR/Dr. McGeehan will contact the ONR for further information.

Enhancement of the METOC curriculum with the Monterey Area Research Institutions' Network for Education (MARINES) (see website: <https://oceansolutions.stanford.edu/marine>) is also discussed. The OC Chair mentioned the benefit of the METOC students taking the Ocean Policy course from the California State University Monterey Bay and the problem of non-transferable grades among the seven participated local universities.

**Action Items:** 1) Secure continued operational funds from the GSEAS Dean at levels commensurate with FY18 expenses (~20K each), 2) Submit proposals to N2N6E for additional operational support through RDTE program, 3) Continue to work with the NPS administration to secure more reliable, broad-based access to the sea for students and researchers across the NPS community.