



WOODS HOLE OCEANOGRAPHIC INSTITUTION

Dr. Robert B. Gagosian, *President Emeritus*

10 May 2007

Dr. Edward J. Ray, President
Oregon State University
600 Kerr Administration Building
Corvallis, OR 97331-2128

Dear President Ray:

On behalf of the Oregon State University President's Commission on Ocean, Coastal, and Earth System Futures, I submit our report and thank you for the opportunity to participate in this most important endeavor. We also thank the faculty and administration for making this exercise a most pleasant experience. In addition, the commitment and participation of President Emeritus, Dr. John Byrne, was extremely helpful in providing the information needed for our effort both in writing and during our visit, as well as educating us about your fine University.

We hope you will find our deliberations useful as you move Oregon State University forward under your leadership. This is an extraordinary opportunity for major advances to be accomplished in learning, discovery and engagement in the ocean, coastal and Earth systems sciences. Society is depending on universities such as Oregon State to lead the way forward. We sincerely hope that our report will serve as a foundation for which you can launch a very important initiative.

Sincerely,

A handwritten signature in black ink, which appears to read "R. B. Gagosian", is placed below the word "Sincerely,".

Dr. Robert Gagosian
President Emeritus

Chair, President's Commission on
Ocean, Coastal, and Earth System
Futures

RBG:reg

Enclosure

Report of the Oregon State University President's Commission on Ocean, Coastal and Earth System Futures

Preface

Oregon State University (OSU) traces its roots back to the Corvallis Academy, founded in 1856, three years before statehood. However, most consider 27 October 1868 as the “Charter Day” for Corvallis College, the precursor to OSU and recipient of the Morrill Act “Land Grant.” Over the next century OSU emerged as one of our nation’s leading universities, and currently enjoys the distinction as the only public university in the United States that has Land Grant (1868), Sea Grant (1968), Space Grant (1992) and Sun Grant (2002) status. On 31 July 2003, Dr. Edward Ray was appointed OSU’s 14th president, committed to sustain and enhance the institution’s proud tradition of learning, discovery and engagement. In 2004, OSU published “The OSU Strategic Plan for the 21st Century,” calling for the University to be one of the nation’s top ten land grant institutions.

In 2006 the Carnegie Classification of Institutions of Higher Education listed OSU as “Comprehensive Doctoral with Medical/Veterinary,” with “very high research activity.” OSU currently receives nearly \$200 M in extramural funding, more grant funding than the rest of the Oregon University System campuses combined. The Carnegie designation is largely the result of two world-class programs: agriculture/forestry and oceanic/coastal marine sciences. In FY 2005, approximately 44% of OSU’s grant funding was in support of ocean and coastal sciences.

In 1996, the W.K. Kellogg Foundation provided funding to establish a Commission to evaluate the “Future of State and Land-Grant Universities” and to provide a status report and a renewed prospectus for

the millennium. Dr. John V. Byrne, President Emeritus of OSU, was chosen to serve as the Executive Director of the Kellogg Commission. Byrne brought enormous experience and prestige to this assignment. During his 11-year term as president (1984-1995), OSU grew in stature, quality and relevance to the state of Oregon (<http://oregonstate.edu/dept/budgets/byrne.html>). The Kellogg Commission prepared six “futures” reports on opportunities and challenges that exist for the American people and their public colleges and universities. In its final report, *Renewing the Covenant: Learning, Discovery and Engagement in a New Age and Different World*, the Kellogg Commission concluded that the new millennium was a “perfect time to renew the educational commitment that spawned so many of the intellectual, material and economic benefits enjoyed by the citizens of the United States.”

In January 2006, the National Association of State Universities and Land Grant Colleges (NASULGC) and the Kellogg Foundation published a systematic evaluation of the lasting impact of the Kellogg Commission; this self-study report was prepared by John Byrne. Campus leaders from thirty-two public universities across the nation, including OSU, were asked to assess whether the recommendations of the Kellogg Commission had had a lasting impact or led to any transformational activities on their campuses. All who responded to the survey indicated that the work of the Kellogg Commission had led to a greater awareness of the mission of public higher education and to the need for change and modernization to keep pace with the world around us. In the Executive Summary of this report (2006), the Commission’s work was characterized as “a wake up call” and “a guide to reform.”

Partly in response to the forward-looking Kellogg Commission reports and subsequent high level discussions, OSU campus leaders began to debate whether OSU was properly positioned to address the probable changes that will occur in the next few decades. One of the major areas of interest was coastal and oceanic sciences, a recognized academic strength at OSU for at least four decades. In 2001 Mark Abbott, Dean of the College of Oceanic and Atmospheric Sciences (COAS), re-instituted the “Ocean

Principals” (see Appendix B), an informal group of ocean leaders at OSU. Subsequently, in 2006, President Ray called for a “Commission on Ocean, Coastal and Earth Systems Futures,” an external advisory group to assist him with an assessment of ocean, coastal, climate and Earth systems at OSU. The Commissioners, Robert B. Gagosian (Chair), David Karl, Edward Lazowska, Marcia McNutt, Edward Miles and Warren Washington, were provided with background documents on the scope, structure and function of seventeen separate marine-oriented organizations ranging from small single-P.I. programs to the COAS, an internationally recognized unit with more than seventy teaching and research faculty.

President Ray presented a formal charge to the Commission: “Given its mission as a Land Grant and Sea Grant institution, its strengths in Earth system science and natural resources, and its effective outreach and extension programs, OSU occupies a strong position to define the future of ocean and coastal science. We are asking you to help us explore and identify a far-reaching vision for that future, one which integrates biological, physical and social sciences in studies of ocean and coastal systems and communities, and develops new means of engaging with society.”

The Commissioners were invited to OSU for a site visit, which was not intended to be a formal program review, but rather a prospective analysis of where OSU might benefit from selective investments to remain relevant, competitive and prepared for continued excellence in a changing world. The visit took place in Corvallis and Newport from 12 to 15 March 2007. At the last minute, Commissioner Washington was unable to participate in the site visit and was asked to review the report prepared by his colleagues.

The site visit began with an evening reception in the impressive Linus C. Pauling Special Collection Room of the Valley Library, where the Commissioners were welcomed by President Ray and met key members of the OSU faculty and administration and many of the OSU Ocean Principals. On Tuesday, March 13, the review team heard presentations in Corvallis from members of the steering group (see

Appendix A) and toured the O. H. Hinsdale Wave Research Laboratory. They then traveled to Newport to learn more about OSU's marine and atmospheric programs and to visit several of the facilities of the Hatfield Marine Science Center, OSU's expanding seaside campus. A reception and dinner were held at the Oregon Coast Aquarium, adjacent to the Hatfield Marine Science Center, after which they returned to Corvallis. On Wednesday the Commission heard testimony from OSU administrators in the morning, then spent the rest of the day and the evening in a series of "brainstorming" sessions to envision the role of OSU circa 2040, including probable changes in the environment and in human (social, political and economic) activities and interactions. Thursday morning the Commissioners met to discuss their findings and to structure their report, including recommendations. This meeting was followed by a luncheon with President Ray and other OSU administrators. After the luncheon each member of the Commission presented a portion of the Commission's findings and recommendations. The presentations generated a lively and far-ranging discussion. This report summarizes the deliberations of the President's Commission.

Oregon State University President's Commission on Ocean, Coastal and Earth System Futures

Introduction

The Oregon State University (OSU) President's Commission on Ocean, Coastal and Earth System Futures was charged by President Edward Ray to explore and identify a far-reaching vision for the future of OSU as a Land Grant and Sea Grant institution - one that integrates the biological, physical, and social sciences in studies of ocean, coastal systems and communities, and Earth systems in general - and to recommend new ways of engaging with society. To aid the Commission in its deliberations President Ray posed the following questions:

1. What are the major directions needed in the ocean and coastal sciences in particular, and Earth System Science in general, in order to address long-term social, economic and environmental challenges?
2. What changes in the external environment will affect these directions or the ways in which OSU interacts with its constituents?
3. Building on what OSU presently has in place, what does OSU need in order to lead the nation in this new paradigm?
4. How should OSU move to a new level of engagement with society to address these complex environmental issues, including the human dimension?
5. What are the optimum pathways OSU can follow to help meet society's needs?

The Commission met at OSU March 13-15, 2007. Their schedule is included as Appendix C of this report. Background material summarizing the learning, discovery and engagement activities of the

units of the university engaged in the Earth System Sciences was provided to the commissioners prior to their visit. OSU faculty, students and staff were extremely helpful to the Commission in its deliberations. As a result of the preliminary preparations, the Commission feels it was well poised to address President Ray's charge. It thanks all those involved for their effort and time.

To address the charge presented by President Ray, the Commission considered four premises as a foundation for its deliberations:

1. As we move through this century, land grant universities, such as OSU will have heavy demands placed on them to help solve the mounting problems faced by society. As a result, the nature of the university as we know it will change in a major way.
2. In order to adequately assist in addressing society's problems, OSU will need to position itself to be recognized as the best institution in Oregon to address these problems and provide the solutions. Such recognition will be essential in order to attract the best and the brightest students and faculty. Competition will be stiff.
3. To be effective in finding plausible solutions to complex societal problems, significant private resources will be needed.
4. Finally, OSU will need to be organized in a way that maximizes the faculty's ability to do their best work and to make use of the university's first-rate facilities. OSU will need to develop new and exciting ways for its faculty to participate in discovering, learning and engaging people in addressing and solving the major problems facing society.

Based on the charge delivered to us by President Ray, we organized our report to answer the following four questions:

1. What are the major directions needed in the ocean and coastal sciences in particular, and Earth System Science in general, in order to address long-term social, economic, and environmental challenges?
2. What changes will occur in the external environment in the future that will affect these directions?
3. What do these directions and influences suggest for OSU?
4. What organizational model would accomplish the objectives outlined in response to these three questions?

1. What are the major directions needed in the ocean and coastal sciences in particular, and Earth System Science in general, in order to address long-term social, economic, and environmental challenges?

In the next several decades the environmental problems facing our changing society will intensify to a significant degree. Three of the major drivers of change will be: a) population growth in Oregon, projected at around 4 million additional residents by 2050; b) a focus of the population increase on the west side of the Cascade Mountains, which will cause major land use changes, resulting in a considerable urbanization of the coastal zone with attendant pressures on the marine environment; and c) increases in the magnitude and rate of climate change which will present a variety of severe challenges to those living in snowmelt-driven river basins. We expect these three drivers of change will increase the demands of the public for the university to be more involved in helping society to solve its problems. We suggest that the following directions will be both necessary and useful ways of adapting to change:

- Coastal and Ocean Sciences will need to move aggressively to add its contributions to the development of Earth System Science, reflecting the fact that the planet is a fully coupled system in all dimensions. Such an effort must be both holistic and multi-disciplinary, thereby requiring changes in the way problems are studied as well as in the nature of the university's engagement with society.
- Considerable effort must be allocated to integrating science with policy, building bridges to society's decision makers in order to facilitate the development of science-based policy adapted to environmental change. We are aware that science does not determine policy and that social values and conflicts of interest determine outcomes. One task of science is to educate and inform decision-makers regarding what is at stake in the interactions of humans with the natural environment and, in turn, to be informed and educated by decision-makers about how they perceive the societal effects of environmental change, the kinds of data and information they will need, and their time lines for decisions. Dialogue between scientists and decision-makers is critical.
- The University must become engaged, not only with public officials, but also with a wide range of stakeholders in a wide range of sectors of activity.
- Coastal and ocean scientists will need to enlist the University's social sciences faculty as partners in their efforts. In addition, close linkages must be formalized between colleges and departments to address societal problems. Such integral changes – social scientists as part of COAS and department linkages - would add significantly to the strategic capacity of COAS to address the problems society will face.
- The University should seek to maximize opportunities for students to find innovative ways to adapt to and manage a period of heightened change. We are impressed by the design and

achievements of OSU's Honors College and suggest that it would serve as a model to the university as a whole.

- Coincident with a world undergoing significant environmental change, the world of the 2040s will be much more affected by the phenomenon of globalization than we are at present. One way for OSU to keep abreast of these developments is to use international collaboration as a major response to global pressures. Such a strategy will entail a conscious effort to partner with universities in other countries, resulting in the development of significant synergies and knowledge to address problems on a global scale.

2. What changes will occur in the external environment in the future that will affect these directions?

Changes in the external environment, in human interaction with the environment, and in organization of human activity will all affect the directions needed to address societal problems.

- *Resources*: Land resources will be depleted. The oceans will be the only remaining source of untapped potential.
- *Population growth and climate change*: The world will be experiencing an era of accelerating population growth. History shows that civilizations developed during periods of climate stability, and that many ancient civilizations were unable to withstand even modest climate fluctuations. It is not rising sea levels, global warming, increased storms, or acid oceans, per se, that we have to fear, but the political destabilization that may ensue as more than six billion people compete for resources on a shrinking habitable planet.

- *The nature of how science is done:* Science now requires interdisciplinary teams for solution to problems, but universities are, for the most part, still organized into mono-disciplinary departmental “silos” that are further organized into like-minded schools of similar-disciplined departments. An exception at OSU is COAS, which has declined to establish departmental walls. COAS sees the oceans and atmosphere as one coupled system. Yet even COAS is limited by a lack of interactions with the social sciences. Solutions to problems involving the oceans, the atmosphere, and society require input from, and dialogue with, the social and political sciences in order to be effective.
- *Computation:* The nature of computation is changing. Formerly, the limitation on computation power was set by model resolution (e.g., grid and domain size). In the future limitations will be set by the demands of increasingly large data sets and continuous data flow from ocean observatories. This change in the nature of computation will require new computational facilities and new types of computational professionals. To achieve this, OSU must look to new cooperation across the University’s schools and departments, to new curriculum content and to new partnerships with industry.
- *International workforce:* The world is becoming “flat”, and the university is no longer an ivory tower. American students no longer have an edge in the work force when software can just as easily (and more cheaply) be supplied from anywhere in the world. Dialogues will be international. At the same time that OSU serves the state, it must remember that it has the

capacity and expertise to compete with the best in the international arena – and will have to be prepared to do so.

- *Broken contracts:* Many of the primary contracts between America's major research universities and the federal government were forged during the cold war. The government said, "If you build the capacity to conduct basic research on behalf of our nation, we will reimburse you for your costs." This contract is now broken. It is becoming more and more expensive to provide space, equip laboratories, and acquire facilities (ships, computers, etc.) for the research at the forefront of socially relevant problems. If capitalization is taken into account, research is now being done on a cost minus basis at most research universities. OSU must look to new models for the "care and feeding" of the expensive research infrastructure (people and equipment) of the future.
- *University accountability:* Today the public expects - and needs - more from its institutions. Unfortunately, it is not necessarily willing to pay more. State universities are expected to deliver value to their constituents. The positive news is that coastal and ocean sciences have a high potential to deliver what the constituents need and expect: socially relevant research important to their daily lives with a reasonably short time frame between discovery and payoff.

3. What do these directions and influences suggest for OSU?

The two preceding sections of this report respond to President Ray's questions and identify a number of significant directions and influences that affect not only the specific area of study of this Commission, but in many cases also higher education in general. In this section, we consider directions and influences for OSU. Among the more important of the directions and influences identified were:

- The ocean, coast, and atmosphere constitute *an integrated system*, and must be studied as such. No longer can atmospheric science be viewed in isolation from oceanography. In titling this Commission the "President's Commission on *Ocean, Coastal, and Earth System Futures*" this shift toward integration was explicitly acknowledged. The COAS home page gets it exactly right, referring to "the study of the Earth as an integrated system."
- The Earth System – and indeed, each of its components – is inherently multidisciplinary: geology, biology, chemistry, physics, engineering and other traditional fields must be brought to bear on the Earth System in an integrated way.
- To a dramatically increasing extent, public policy in these areas must be informed by science, which can be achieved only if policy and science are integrated seamlessly and continuously.
- Interest in, and concern for, Earth Systems – for the environment – has increased dramatically in recent years and will continue to increase significantly for the foreseeable future

These influences and directions provide a framework for requirements for any institution that desires to be a leader in learning, discovery, and engagement related to the Earth System. The requirements for such leadership will include a university-wide mission, an organization that permits flexibility of operation and adequate facilities. The university will be student centered and will engage openly with the public to address societal problems. OSU can be such a leader.

- The organizational structure, the reward system, and the individuals chosen as leaders must be focused on the overall success of the mission of OSU, not just on the narrow advancement of their own particular unit within the University.
- OSU must be highly flexible and nimble. It must be able to form interdisciplinary teams quickly in order to identify emerging long-range opportunities and to respond to shorter-term requests for guidance. Just as importantly, it needs the ability to re-form these teams as requirements change. One problem with schools and colleges, departments, and centers, institutes, and programs is that they are “the gift that keeps on giving” and they tend to continue to exist even when the circumstances that stimulated their creation have changed, diminished in importance, or disappeared. This requirement of flexibility and nimbleness suggests a matrix organization with deep capabilities in particular domains, and the ability to create flexible integrated teams to tackle emerging problem areas.

Although we were not asked to review individual units, we found much to be recommended in the structure of COAS. It is structured around discipline groups, without departmental boundaries, and forms multidisciplinary teams to respond to specific opportunities and challenges. COAS reaches out to engage other faculty on campus. For example, we heard an enthusiastic endorsement from Dan Cox, Director of the Hinsdale Wave Facility, who said he had little interaction with the oceanographers at the previous university where he was employed, despite repeated overtures on his part. But, at OSU, the oceanographers have reached out to him. As a second example, the Marine Science Web Portal maintained by COAS, is a comprehensive portal for students, faculty, and the public to learn of marine science activities and opportunities throughout OSU, not just at COAS.

Although COAS has the right structure and the right inclinations, COAS is not broad enough. For example, COAS has limited state funding, resulting in limited (although not insignificant) engagement with undergraduates. It has no “opportunity fund” or set-aside monies to create new teams to prepare for emerging initiatives and opportunities. In addition, COAS has limited engagement with public policy makers and the social sciences and it must enhance its engagement with the public and with policy makers.

- A real strength of OSU is its “land grant orientation,” with its commitment to impacting the region, the nation and the world in a positive and meaningful way. We saw a number of impressive examples during our short visit - for example, the Institute for Natural Resources (INR), among many others. This commitment pervades the thinking of many of OSU’s faculty and staff. These attitudes and efforts of engagement represent a real competitive advantage for OSU. They should be emphasized and possibly expanded.

Some examples:

- a. Focus on outreach to K-12, the OSU students of the future.
- b. Encourage internal efforts to be better integrated by bringing together science and policy.
- c. Provide a single OSU point of contact for external constituencies.
- d. Provide easy ways for those internal to OSU to seek internal collaborations and external engagement.

OSU must engage more students in discovery, particularly interdisciplinary and team discovery, and develop new models for student learning, and engagement. The University Honors College provides a structure to do this; it needs to be expanded to attract to OSU more of the best students from Oregon and the Pacific Northwest.

- OSU must not take its facilities for granted. For example, the R/V Wecoma is essential to science and is also an oceanographic icon, regionally and nationally. This and other University National Ocean Laboratories (UNOLS) vessels will be scheduled for retirement near the end of this decade. Competition for replacement vessels will be intense since there is likely to be a reduction in vessel number. Retention of this vessel is critical and is far from a foregone conclusion. The Hinsdale Wave Facility is unique and seems to be on a positive course in recent years - strive to further expand its visibility, utilization, and impact. Another example is the great potential we saw in the Hatfield Marine Science Center campus during our brief visit, but we doubt that its potential is being fully realized. To some extent the Hatfield Center is a “coastal studies strip-mall” rather than an integrated facility for learning, discovery, and engagement.

These imperatives are a tall order, but if you get them right, you will transform OSU and see dramatic results.

- You will increase the stature of OSU within the state of Oregon, as the “go-to resource” on questions related to the Earth System, complementing other areas where OSU already has this reputation.
- You will attract dramatically better students who come to OSU because of the opportunity to participate in discovery-based learning and engagement in a field of enormous importance, impact, and attractiveness.
- You will establish OSU as one of the leading land grant institutions in the nation, not only for learning, discovery, and engagement in the Earth System Sciences, but also for the flexible organizational structure that enables high performance.

- You will attract a new and powerful cadre of major donors, who will enable continuous advancement of OSU by focusing on ocean, coastal and Earth system issues, an area of great interest to citizens and alumni.
- You will achieve all of this in a very cost-effective manner by investing in an area where the existing foundation is already extraordinarily strong.

4. What are the optimal pathways OSU can follow to help meet society's needs?

Here we address the organizational structure of OSU's Earth System Sciences effort and recommend the creation of a new entity. The criteria for this new entity were developed according to the unique aspects of OSU, and its strengths, and using the expertise of the COAS and the INR as a foundation.

OSU's current effort in coastal and ocean-related research, education and service is spread among seventeen Centers, Institutes and Programs (CIPs) and five colleges. The new entity we propose will draw on the brightest and best physical, biological and social scientists and engineers from these groups, thereby providing a mechanism for the whole to be more than the sum of its parts. In addition, the new entity will maximize the interactions between faculty and students engaging in interdisciplinary problems and using shared facilities, such as the wave tank and the R/V Wecoma. This new entity will facilitate a seamless transition between research and education in addressing societal and policy issues. It will bring together learning, discovery and engagement in an outstanding manner.

We envision “The OSU Enterprise for Environment and Resources,” a new entity which will be a melting pot of faculty and students interacting on thematic areas, such as climate change or energy. The projects within such areas would be initiated and completed while new directions were being initiated. The Enterprise will be flexible and nimble in taking advantage of new opportunities. Responding to change will be what it does best.

We recommend that 1) new financial resources be made available for innovation, thus providing leverage for the faculty to compete in new ways for federal and state support; 2) the Enterprise have new criteria for performance evaluation for faculty and for department chairs and deans, so that all will be partners and will share in the success of the Enterprise; and 3) the CIPs be reviewed with the intent of identifying faculty strengths that could be utilized in the new Enterprise’s thematic areas and identifying where additional faculty are needed.

It is not clear to us at this time whether the Enterprise should reside within OSU or exist as a wholly owned 501.c.3 organization. There are advantages to both arrangements. A possible scenario could be to begin the Enterprise as an internal part of OSU which later could be spun off as a separate entity, related to OSU.

In summary, the OSU Enterprise for Environment and Resources will provide new opportunities for faculty and student participation in exciting cutting edge research, interacting seamlessly with colleagues within and across the physical, biological and social sciences, with no boundaries between disciplines. This will result in a first-rate student body that will want to matriculate at OSU because it is recognized as the best place to participate in discovering, learning and engagement in new and exciting

ways. OSU will be the place for those learners who want to make a difference in solving societal problems. OSU's international reputation will be enhanced, thereby providing new opportunities for global engagement. The Enterprise will serve as a model for other areas of expertise at OSU beyond the Earth System Sciences. It will serve as a model for universities around the world.

We see tremendous potential at OSU. The elements for success already exist. All that is needed to take the next step is focus and leadership. You have a special opportunity to make a significant difference and add to OSU's legacy of leadership. The time is now. We recommend you seize the moment!

**Robert B. Gagosian, Ph.D., President Emeritus, Woods Hole Oceanographic Institution,
Chair, President's Commission on Ocean, Coastal, and Earth System Futures.**

On behalf of Commission members:

David Karl, Ph.D., Professor of Oceanography, University of Hawaii.

**Edward Lazowska, Ph.D., Bill and Melinda Gates Chair in Computer Science &
Engineering, University of Washington.**

**Marcia McNutt, Ph.D., President and CEO, the Monterey Bay Aquarium Research
Institute.**

**Edward Miles, Ph.D. Virginia & Prentice Bloedel Professor of Marine & Public Affairs and
Senior Fellow, Joint Institute for the Study of Atmosphere and Oceans, University of
Washington.**

Warren Washington, Ph.D., Senior Scientist, National Center for Atmospheric Research.

Appendix A

Oregon State University Ocean, Coastal and Earth System Steering Group

John Byrne	President Emeritus; Executive Director, OSU President's Commission
Mark Abbott	Dean, College of Oceanic and Atmospheric Sciences (COAS)
John Cassady	Vice President for Research
Bob Malouf	Director, Sea Grant
Sabah Randhawa	Provost and Executive Vice President
Scott Reed	Dean, OSU Extension Service

Appendix B

Oregon State University Ocean Principals

Mark Abbott	Dean, College of Oceanic and Atmospheric Sciences
Michael Banks	Director, Cooperative Institute for Marine Resources Studies (CIMRS)
Sherman Bloomer	Dean, College of Science
George Boehlert	Director, Hatfield Marine Science Center
John Byrne	President Emeritus, OSU
Dan Cox	Associate Professor, Civil Engineering; Director, Hinsdale Wave Research Laboratory
Dan Edge	Department Head, Fisheries and Wildlife
Mark Floyd	Director, News & Communication
Michael Harte	Professor, COAS; Director, Marine Resource Management Program
Jane Lubchenko	Distinguished Professor, Zoology
Bob Malouf	Director, Sea Grant
Bruce Mate	Professor, Fisheries and Wildlife; Director, Marine Mammal Institute
Bruce Menge	Distinguished Professor, Marine Biology, Department of Zoology
Gil Sylvia	Associate Professor, Agricultural Resources & Economics; Superintendent, Coastal Oregon Marine Experiment Station (COMES)
Harry Yeh	Professor, Coastal and Ocean Engineering

Appendix C

Schedule

President's Commission on Ocean, Coastal and Earth System Futures

March 12 – 15, 2007

<u>Monday March 12</u>	<i>Welcome Reception</i>
6:00 - 8:00	Welcome Reception for commission and steering group Who: Commission, steering group, President Ray, Luanne Lawrence, Mark Floyd Place: Valley Library Special Collections Room
<u>Tuesday March 13</u>	<i>This is OSU: Tsunami Research Center and Hatfield Marine Science Center with panel presentations by OSU scientists and engineers</i>
7:45 am	Pick up commissioners at the hotel (in van)
8:00 - 9:30	Breakfast and meeting Who: commission, steering group Place: Journey Room, Memorial Union
9:45 - 10:45	Hinsdale Wave Facility (transportation by van for commission) Who: commission, steering group, Mark Floyd Place: OSU campus
11:00	Drive to Newport (commissioners and John Byrne in OSU van)
12:30 - 1:45	Lunch and HMSC presentation Who: commission, steering group, panelists, ocean principals, Mark Floyd Place: HMSC Library
2:00 - 5:00	Panel presentations Who: commission, panelists, steering group, ocean principals, Mark Floyd Place: HMSC Library
5:30 - 8:00	Reception and Dinner Who: Commission, panelists, steering group, ocean principals, HMSC guests Place: Oregon Coast Aquarium, Newport
8:15 - 9:30	Drive to Corvallis
<u>Wednesday March 14</u>	<i>Brainstorming Meetings: visioning and brainstorming about the world in 2040, the nature of the earth's environment, the human element (social, political, economic) and the role of OSU. Opportunity for follow-up on Tuesday's activities, meet with scientists, engineers, and other individuals pertinent to the commission's charge.</i>
7:45 am	Pick up commissioners at the hotel in OSU van
8:00	Breakfast Who: commission, steering group, others by invitation

Place: Journey Room, Memorial Union

8:30 - 9:30 Recap and information

Who: commission, steering group, ocean principals

Place: Journey Room, Memorial Union

10:00 - 11:30: Brainstorm ideas for vision to 2040

Who: commission, steering group, ocean principals

Place: Journey Room, Memorial Union

12:00 - 1:30 Lunch

Who: commission, steering group, ocean principals

Place: Journey Room, Memorial Union

2:00 - 4:00 Brainstorming/discussion

Who: commission, steering group, ocean principals

Place: Talisman Room, Memorial Union

4:00 - 5:15 Free time (transportation for commissioners to/from hotel)

5:30 - 7:00 Reception

Who: commissioners, ocean principals, panelists, invited faculty/staff

Place: Room 109, Memorial Union

7:30 - 9:30 Dinner

Who: commission, John Byrne

Place: Hilton Boardroom, Hilton Garden Inn

Thursday March 15 *Wrap up and presentation of report to OSU Administration; debriefing for the President, Provost, Vice-President for Research*

8:15 am Breakfast at hotel

Who: commission, steering group

Place: Dining Room, Hilton Garden Inn

9:00 - 10:30 Meeting to discuss presentation to President Ray

Who: commission, steering group

Place: Executive Suite, Hilton Garden Inn

10:30 - 11:00 Checkout for commissioners departing Thursday

11:30 - 12:30 Lunch

Who: commission, steering group, president, Luanne Lawrence

Place: President's Conference Room, Kerr Admin Building

12:30 - 1:30 Presentation to President Ray by the commissioners

Who: those at lunch, ocean principals, others by invitation

Place: President's Conference Room, Kerr Admin Building



NCAR

National Center for Atmospheric Research

Climate and Global Dynamics Division • Climate Change Research Section

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17 May 2007

Professor John Byrne
President Emeritus
Executive Director, OSU President's Commission
Oregon State University
600 Kerr Administration Building
Corvallis, Oregon 97331-2128

Dear John:

I am pleased to offer my thoughts on the Commission report and the questions raised in President Ed Ray's letter to the Commission. Clearly Oregon State University is to be congratulated for putting together an excellent Commission of true experts. I regret that I ran into a medical problem which at the last minute prevented me from taking part directly in the Commission's work. You have provided this opportunity for me to provide my views on the report and overall task of the Commission.

I want to start out my comments by saying the charge by President Ray and the Commission report provide a roadmap and mechanism for setting new priorities in the ocean, coastal and Earth sciences. Clearly we are entering into a new funding paradigm that must be faced by Oregon State University (OSU). One thing we do know is that institutions like OSU must more strongly provide service to the state, nation, and world on many tough but very important societal issues that deal with the environment as well as a more sustainable future. OSU is well equipped in my opinion to take advantage of its educational and research strength to take on new challenges of greater service and educational purpose.

Here are my specific comments on the report:

Page 2. I completely agree with the Commission report that OSU has the depth and expertise to contribute directly to solving some of society's problems. In order to support this new future, they will need to find funding from other parts of the government than mostly the education portion. Funding with the private sector should be opened up even more than in the past. Having top faculty and students will go a long way toward making OSU more competitive. I feel with the new Congress and a new administration coupled with the increased awareness of climate and global change, there will be stronger funding opportunities for OSU and other institutions of higher learning to come forth with solutions to the problems. The key is to have excellent and flexible faculty to successfully win competitive funding opportunities. The faculty must understand there should be a healthy mix of curiosity driven research and mission driven research. Both must be pursued at OSU, although I expect the mission driven research will be better funded in the future.

Page 3-4. Even though the major purpose of the task and response of the Commission is to address ocean and coastal issues, I would like to put in a plug for the Earth, land/vegetation, and atmospheric sciences. There needs to be some strengthening of the other sciences that are very much tied to ocean and coastal issues. I agree a holistic approach is essential to being successful. One thing that OSU might consider is a stronger interface between the university and policymakers. Here at UCAR, we have a very small but effective group of people who work both on the long-term interactions with policymakers, doing such things as holding one day workshops in Washington DC on issues like climate change, sustainability, weather services, etc. These workshops are mostly attended by the staff on the hill and then there are receptions in which the members of Congress mingle with scientists. Clearly for this to work you have to exercise care in the selection of faculty members....they have to be top rate and capable of getting in the major points when they have face time with busy policymakers. As you know not all faculty have that ability. The other important attribute of such a small group is to deal with the almost daily need to respond to an urgent need from the policymakers. This small group at UCAR has a long list of experts who are willing and capable of providing information to the policymakers on an almost on call basis. These types of services are absolutely invaluable to policymakers and their staff as they are dealing with complex environmental issues. There are certain social scientists that you have on your campus that could be brought into this sort of operation as the Commission's report suggests. There will be some students who will like and seek the opportunities to help serve in this interface between the university and policymakers....note this could extend to the industry also. The one note of caution is this sort of activity should deal with scientific facts and not partisan politics. Last Monday night I had dinner with the former Chief of Staff for the House Science Committee, Dan Goldston, who served under Congressman Boehlert. He reminded me of the informational workshops he attended conducted by UCAR and how useful they were for him to learn about many environmental issues.

The issue of globalization must be a front burner issue for OSU. I suggest working in a broader framework than just partnering with a few international universities. I think the collaboration should use various international organizations that foster interaction and educational opportunities for both faculty and students. This may require a small office that is well connected to both the State Department and NSF international programs. Industry too has such international organizations. OSU should be a strong player in international science and engineering issues.

Page 5. One minor point that I think is overstated in the report is the comment on Resources. They say "Land resources will be depleted." I believe that is a bit too strong. Clearly, as the state, nation, and world moves toward a more sustainable future, we have to do a much better job. Already, you see the awareness increasing and hopefully we will find ways to preserve and enhance land resources. We have to! The science provided by OSU and other institutions points to substantial progress in this area.

Page 6. I like the Commission's response to "The nature of how science is done." A less structured campus is the only way to go to deal with complex societal problems. My institution, NCAR, and many other universities are trying to solve this problem. I suggest a search for successful examples that can help you pattern structural changes. Obviously, OSU is unique in many ways so I am sure there is no perfect model to follow.

Computation is always a problem. I see the NSF, Department of Energy, and NOAA going toward a set of fewer but well interconnected supercomputers. At the same time there are many powerful small computer clusters available on campus. I suspect the days of a single university building a big computer center are mostly over. Faculty researchers can accomplish a great deal on modest cluster computers and if they need very big facilities they can access them from their campus to any place in the nation. High speed networking on the campus will be essential for both faculty and students.

Page 7. I agree with the statement “Broken contracts.” As the Chair of the National Science Board, I testified many times about the sad state of preserving the scientific and engineering infrastructure. Clearly, I am a strong believer that the federal government has let the academic community down. I completely agree with the Commission on this point and the University accountability issue. Being more aggressive about doing societal relevant research will be key to getting more financial help.

Page 8. The public and policymakers concerns about climate change and global change will hopefully provide more resources however, OSU must be ready to seize specific opportunities as they come forward. A list of those scientific concerns can be found in various IPCC and NRC reports.

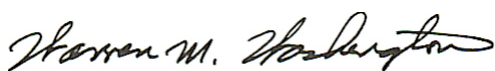
Page 9-10. All of these recommendations make sense to me. Again many of the recommendations revolve around the need to have a more flexible structure that is fewer departments oriented. I did not take part in the COAS discussion so I am not going to say much about it except to say the recommendations seem reasonable to me. The idea of an institute for organizing some of the focus activities has been shown to work. My only caveat is that new faculty must not be over committed that it would interfere with doing their research and advancement up the appointment ladder.

Page 11. The “go-to-resource” needs that small office I referred to earlier as a way to provide information to the public and policymakers. If you have such an office I suggest you see if it is as successful as it needs to be and maybe it should be reviewed by known successful similar peer organizations. This activity extends well beyond just a public relations operation.

Page 13. I really like the “The OSU Enterprise for Environment and Resources” concept. This brings up a point I found missing in the recommendation. The engineering talent on the campus has not really been mentioned. It is an excellent resource to be integrated into the theme of this commission. There must be a way to use their talents and expertise.

Thank you for the opportunity to contribute to this “thinking ahead” exercise. I wish OSU the best as it looks for a new path forward.

Sincerely,

A handwritten signature in cursive script, reading "Warren M. Washington".

Warren M. Washington
Senior Scientist and Section Head