



## Pacific Marine Environmental Laboratory

A leader in developing ocean observational systems to address NOAA's mission

### Indicators of Preeminence

a. A lab's total number of refereed publications per unit time and/or per scientific Full Time Equivalent staff (FTE).

**1,417 total articles from current PMEL authors; 323 during the period 2004-2007. For more information, see the information compiled under, "Publications and Citations" tab 8 in your binder, or the corresponding subfolder in the "Indicators of Preeminence" folder on your flash drive.**

b. A list of technologies (e.g. observing systems, information technology, numerical modeling algorithms) transferred to operations/application and an assessment of their significance/impact on operations.

**Most significant Transitions to Operations:**

- TAO Moored Buoy Array (in progress)
- DART Tsunami Buoy Technology
- Tsunami Modeling Capability (in progress)

**For more information, see the information compiled under "Transitions/Patents," tab 12 in your binder, or the corresponding document in the "Indicators of Preeminence" folder on your flash drive.**

c. The number of citations for a lab's scientific staff by individual or some aggregate. **37, 243 total citations (as measured by ISI Web of Science) for all current PMEL authors, as of 06/26/08. Number of citations, by author, are listed, along with H-Index, under "Publications and Citations," tab 8 in your binder, or the corresponding subfolder in the "Indicators of Preeminence" folder on your flash drive.**

d. A list of awards won by groups and individuals for research, development, and/or application.

**Three Department of Commerce Gold Medals were awarded to PMEL staff members during the 2004-2007 period. Five PMEL staff were honored with the 2007 Nobel Peace Prize for their work in the development of the current IPCC Assessment. A complete listing of awards received by PMEL staff, arranged by year, is shown under "Awards," tab 9 in your binder or the corresponding document in the "Indicators of Preeminence" folder on your flash drive.**

e. Memberships and involvement in prestigious organizations (e.g., the National Academy of Sciences, National Academy of Engineering, or fellowship in the American Meteorological Society, American Geophysical Union or the American Association for the Advancement of Science etc.).

**Among current PMEL staff, there are: 2 AGU Fellows, 2 AMS Fellows, 1 Fellow of The Oceanography Society, the current AGU President-Elect, and the past president of the AGU Ocean Sciences Section. More complete information can be found under “Scientific Leadership/Professional Societies,” tab 11 in your binder or the corresponding document in the “Indicators of Preeminence” folder on your flash drive.**

f. Service of individuals in technical and scientific societies such as journal editorships, election to boards or executive level offices, service on U.S. interagency groups, service of individuals on boards and committees of international research-coordination organizations.

**About 90% of PMEL scientific staff are members of 103 International, National, and NOAA committees. Editorships; memberships on International, National, and NOAA committees; and Cooperative Institute and University affiliations for the 2004-2007 time period are located under “Scientific Leadership/Committee membership,” tab 10 in your binder or the corresponding subfolder in the “Indicators of Preeminence” folder on your flash drive.**

g. A list of research products, information and services and an assessment of their impact by end users, including participation or leadership in national and international state-of-science assessments.

- **Publications and Citations**
- **Data availability via internet**
- **Contributions to IPCC Assessment**
- **Forecast capability: tsunami and fisheries**
- **Forecast research: El Nino, CO2 inventory**
- **Discoveries: Ocean Acidification, liquid CO2**
- **Development of new measurement technologies**

h. Evidence of collaboration with other national and international research groups, both inside and outside of NOAA as well as reimbursable support from non-NOAA sponsors. **PMEL scientists, engineers, and information technology personnel receive funding from all NOAA line offices, the Climate Program Office, the Office of Ocean Exploration, and, external to NOAA, from the U.S. Navy, NASA, FEMA, Department of Energy, U.S. Geological Survey, U.S. Agency for International Development, National Science Foundation (through academic institutions), Nuclear Regulatory Commission, North Pacific Research Board, and foreign governments. Collaborative agreements also include in kind provision of ship time to support joint projects, as evidenced by research cruises with NOAA/National Marine Fisheries Service, Japan, India, Indonesia, Chile, France, Brazil, and Canada. More complete information can be found under “Proposals,” tab 13 in**

**your binder or the corresponding document in the “Indicators of Preeminence” folder on your flash drive.**

i. Significance and impact of involvement with patents, Cooperative Research and Development Agreements (CRADAs) and other activities with industry.

**In the 2004-2007 time period, PMEL was granted one patent and a second patent is currently pending. PMEL has developed one license agreement with a private company and two Special Studies agreements (one signed, one pending) with private industry partners to develop observing system technology. For more information, see the information compiled under “Transitions/Patents,” tab 12 in your binder, or the corresponding document in the “Indicators of Preeminence” folder on your flash drive.**

j. Other forms of recognition from NOAA information customers such as decision makers in government, private industry, the media, education communities, and the public.

**During the 2004-2007 period, 580 public media events (local and national television and radio stories, local and national newspaper stories, web and magazine articles) and 25 NOAA press releases and articles featuring PMEL science. More information is available under “PMEL in the News,” tab 14 in your binder, or the corresponding subfolder in the “Indicators of Preeminence” folder on your flash drive.**

k. Contributions of data to national and Global Earth Observing System of Systems (GEOSS)-related data bases and programs, and involvement in international quality-control activities to ensure accuracy, precision, inter-comparability, and accessibility of global data sets.

- **TAO Array**
- **PIRATA Array**
- **RAMA Array**
- **Argo floats**
- **Moored and shipboard pCO<sub>2</sub> measurement systems**
- **Acoustic monitoring networks for detection and tracking of geophysical events and marine mammals and monitoring ambient ocean noise**
- **Repeat Hydrography Program (Decade-scale monitoring of water column parameters over established survey lines)**
- **Ocean Climate Station buoys**
- **Major role in developing international quality control standards for ARGO salinity data**