

**ANNUAL PROGRESS REPORT
TO NOAA**

NOAA AWARD NA11OAR4320091

REPORTING PERIOD: 10/1/11 – 6/30/12

COOPERATIVE INSTITUTE FOR MARINE RESOURCES STUDIES

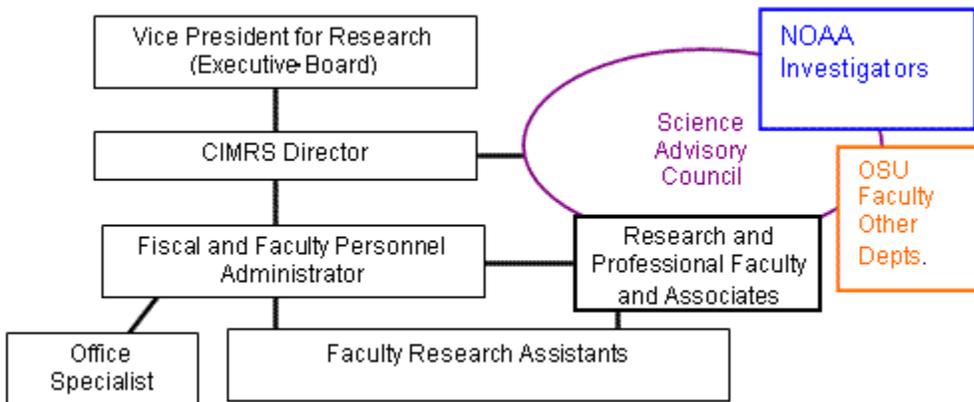
OREGON STATE UNIVERSITY

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ORGANIZATION

CIMRS is administered through the OSU Research Office with oversight from an Executive Board made up of members from the participating NOAA laboratories and collaborating OSU colleges and programs under the terms of a Memorandum of Understanding between OSU and NOAA/NMFS. A Science Advisory Council (SAC) gives input on research directions, progress, and policy to the Director.



2011/2012 EXECUTIVE BOARD

Rick Spinrad (Chair) Vice-President for Research, Oregon State University	Stella Coakley/ Larry Curtis Associate Dean, College of Agricultural Sciences, OSU
Mark Abbott Dean, College of Oceanic & Atmos. Sciences, OSU	Patricia Livingston Director, REFM, Alaska Fisheries Science Center, NOAA
John Bengtson Director, National Marine Mammal Laboratory, AFSC, NOAA	Chris Sabine Director, Pacific Marine Environmental Laboratory, NOAA
Stephen Brandt Director, Oregon Sea Grant, OSU	John Stein Acting Science Director, Northwest Fisheries Science Center, NOAA
Sherman Bloomer Dean, College of Sciences, OSU	Michael Banks (Ex Officio) Director, CIMRS, OSU
George Boehlert Director, Hatfield Marine Science Center, OSU	

SCIENCE ADVISORY COUNCIL

David Noakes (Chair) Professor, Dept. of Fisheries and Wildlife, OSU	Clare Reimers Professor, College of Earth, Ocean, and Atmospheric Sciences, OSU
Jerri Bartholomew Assoc. Professor, Dept. of Microbiology, OSU	Clifford Ryer Fisheries Biologist, FBE, RACE Division, AFSC, NOAA
Michael Blouin Professor, Dept. of Zoology, OSU	Paul Wade Research Biologist, National Marine Mammal Laboratory, AFSC, NOAA
William Chadwick Professor, CIMRS	Laurie Weitkamp Research Fisheries Biologist, Conservation Biology Division, NWFSC, NOAA
Kurt Fresh Estuarine and Ocean Ecology Program Manager, FE Division, NWFSC, NOAA	Dawn Wright Professor, Dept. of Geosciences, OSU
Michelle McClure Director, FRAM Division, NWFSC, NOAA	Michael Banks (Ex Officio) Director, CIMRS, OSU
William Percy Professor Emeritus, College of Earth, Ocean, and Atmospheric Sciences, OSU	

TASK 1: Administration, Education, and Outreach

A meeting of the CIMRS Executive Board (<http://oregonstate.edu/cimrs/executive-board>) was held March 2, 2012. Several new members include: John Bengtson & Pat Livingston (Alaska Fisheries Science Center) and Chris Sabine (Pacific Marine Environmental Laboratory). New membership welcomed to the Science Advisory Council (<http://oregonstate.edu/cimrs/sac>) includes: Paul Wade (NMFS National Marine Mammal Laboratory), Laurie Weitkamp (NMFS Conservation Biology Division), Clifford Ryer (NMFS Fisheries Behavior Ecology, Resource Assessment & Conservation Engineering Division), Michelle McClure (NMFS Fishery Resource Analysis and Monitoring Division), Kurt Fresh (NMFS Fish Ecology Division) and Bill Chadwick (CIMRS).

After Board approval in March, the revised MOA between OSU and NOAA was forwarded to CI Program Director, Philip Hoffman. The Interim Progress Report was completed as required by the Special Award Conditions of this award.

CIMRS Director, Dr. Banks, and Administrator, Jessica Waddell, attended the Annual CI Directors' Meeting in Silver Spring, MD in March 2012. Dr. Banks serves as a member of the NOAA Cooperative Institutes Executive Committee.

Dr. Banks also participated in a dinner discussion with Peter Lamb (Director, Cooperative Institute for Mesoscale Meteorological Studies (CIMMS)) and Shirley Pomponi (Director, Cooperative Inst. for Ocean Exploration, Research and Technology (CIOERT)). This was to outline goals for the joint CI directors meeting and coordinate a follow-up meeting with senior NOAA leadership and members of the CI Executive Committee (to be held in DC, August 1st, 2012). Additionally, Dr. Banks participated in meetings of the NOAA Science Advisory Board R&D Portfolio Review Task Force (June 18, 2012), OAR Senior Research Council (DC, March 2012), quarterly update meetings with Sandy MacDonald and CI Directors, and other CI Directors' ad hoc meetings via numerous emails and telephone conference calls.

Dr. Banks and Jessica Waddell held an update meeting with CIMRS faculty research assistants (January 12, 2012). Dr. Banks held update meetings with CIMRS faculty (April 25, 2012) and CIMRS research associates (April 27, 2012).

Dr. Banks visited Seattle June 20th, 2012 to meet with leadership from the three main NOAA participants in CIMRS – John Stein (NWFSC); Chris Sabine (PMEL); John Bengtson, Pat Livingston and Steve Ignell (AFSC) to discuss strategy for sustaining CIMRS research capacity during times of budget shortfall.

Dr. Banks responded to several requests for information during this period from the CI Office, acting as a liaison from other NOAA offices, e.g., International Affairs. He also made a presentation to a public meeting of the Oregon Hatchery Research Center Board (March 12, 2012) under the title: OSU-NOAA Futures through the Cooperative Institute for Marine Resources Studies.

Dr. Banks represents CIMRS at OSU Provost's Marine Council (<http://oregonstate.edu/leadership/provost/marine-council>) where he is a member of the NOAA Fleet Relocation Action Coordination Team. He also contributes to quarterly OSU Research Office CIP (Center, Institute, and Programs) meetings at OSU and bi-weekly HMSC Executive Committee meetings, enabling consistent dialogue and exchange with leadership from COMES, MMI, CEOAS, HMSC, OR Sea Grant and OSU Libraries.

Ms. Waddell participated in quarterly CI Administrator conference call meetings in fall and spring with other members of the CI community and NOAA CI Office. Additionally, she participated in several of the OAR Constituent conference calls. Training was provided for Grants Online in June via a Go to Meeting initiated by GMD in which both Ms. Waddell and assistant Hui Rodomsky participated. Dr. Banks and the CIMRS Administrator have been responsible for submission of 15 proposals under the new Institutional award during the period 10/1/11-6/30/12.

From April to June, administrative assistant Hui Rodomsky redesigned the CIMRS website following the new guidelines for OSU's content style using Drupal. The new website is greatly improved and allows increased ease in finding information for all users. Ms. Rodomsky also assisted in many of the Institute's administrative tasks.

Task 2: Theme: Marine Bioacoustics

Advanced Methods for Passive Acoustic Detection, Classification and Localization of Marine Mammals - \$60,481

Over the last decade, significant progress has been made in the development of marine mammal passive acoustic detection, classification, and localization (DCL) algorithms and software. This project brings together leaders in the field in a focused collaboration to develop advanced detection, classification and localization methods and to implement them in widely-used and critical software. Methods for detecting and classifying clicks from odontocetes and tonal sounds from odontocetes and mysticetes (whistles and moans, respectively) will be trained and tested using data sets drawn from candidate species that produce these signal types. Advanced localization algorithms will also be developed with a focus on species that produce highly directional echolocation clicks; these make traditional multi-sensor localization difficult, whether it is used with sonobuoys, cabled arrays, and or arrays of floating recording buoys. To be maximally beneficial to the community, these new advanced algorithms must be widely available in multiple software systems. This project will develop standardized interface specifications for detection, feature extraction, classification, and localization that will make adding new DCL methods relatively simple for this project and the wider marine mammal detection, classification and localization community.

Progress 10/1/11 – 6/30/12:

Datasets. Datasets of sound recordings for 10 populations, representing 7 odontocete species and 2 mysticete species have been assembled, labeled for this project, and placed on a file transfer site, accessible by all project partners. Datasets comprise of existing recordings from mobysound.org, US Navy, and Scripps Institution of Oceanography.

Detection and classification algorithm development. A new method for whistle detection and classification is in the early stages of development.

Software interfaces – Subcontract with San Diego State University. From March to June 2012, Marie Roch's lab at San Diego State University developed the initial software architecture of a plug-in and 10 interface programming class structures for detection, classification, and localization capabilities. Roch's lab is currently writing scenarios to identify and remedy problems prior to implementation.