PacIOOS

997.23 Strategic Operational Plan
(c)Goals and Objectives
2)Major objectives that guide the RICE's priorities for research and design

Research and development (R&D) is an inherent part of PacIOOS' objectives and program operations. R&D advances ocean observation capabilities and scientific understanding, and allows for the provision of more accurate data and data products for coastal management. Much of the scientific progress made by PacIOOS Principal Investigators (PIs) relies on the their ability to continuously conduct R&D.

One of PacIOOS' major objectives is to support R&D conducted by PIs as it improves the success rate of meeting programmatic goals outlined in each focus area of the SOP. Individual components of the program use a fraction, ~10%, of their PacIOOS annual budget to advance capabilities of the system through R&D. For example, PacIOOS support allows Dr. Kim Holland to serve as a pioneer in the field of animal telemetry. He is the first to: a) collect fish tag data using land-based receivers, and b) produce a plot of ambient oxygen concentrations by an animal as it moves through its environment using a prototype oxygen sensing tag. These advances have major implications for the use of animals as oceanographers, resource management, and for the IOOS program, overall.

While support for Dr. Holland's work aids in meeting the SOP objectives in the '*Ecosystems and Living Marine Resources*' focus area, PacIOOS support for R&D is also driven by activities that directly address other focus area objectives as well. PacIOOS PIs are developing new assimilation schemes for all models (wave, atmospheric, and ocean circulation) that span the entire PacIOOS region and aid in addressing various components of each focus area and stakeholder needs, collaborating with federal partners to test new sensors for dissolved inorganic carbon (DIC) as it relates to the issues of *water quality* and acidification, and testing instrumentation in and around harbors to develop more accurate prediction and forecast systems for *coastal hazards.*