



## Governing Board Meeting 2 December 2016

### Pre-Meeting

9:00 am to 9:30 am | Coffee and pastries

### Call To Order

9:30 am

#### Introductions

- New Members
- Packets
- Sign In, Update Contact Sheet, Lunch Orders (*Phil's \$10/each*)

Approval of Minutes from May 27, 2016

### Director's Report

9:45 am

Jim Harvey

#### NEW FACULTY/STAFF UPDATES

- Visiting Scientist AY17-18 : MLML's Alison Stimpert, Vertebrate Ecology
- Visiting Scientist AY 18-19 announcement posted, please distribute throughout your campus science depts., ***closes 1 July 2017***
- Dr. Rick Starr retiring from CA SeaGrant
- Dr. Stacy Kim retiring from Research Faculty
- CA SeaGrant Specialist (Center for Aquaculture) – position posted by UC San Diego, closes Jan. 6, 2017

#### ANNUAL REPORT

- Mission and Goals
- Academic Program
- Budget
- Center for Aquaculture ORTU Status

10:45 am

### BREAK

11:00 am

50<sup>th</sup> Anniversary Highlights

New CA Regional Class Research Vessel – CSU/UCSD/SIO

SJSU Advancement Fundraising Plan – “The Case for MLML”

By Law Amendments: Call for vote to accept

12:00 pm

### LUNCH

12:15 pm

Administrative Campus Update: CSUMB/SJSU

1:00 pm

General/Other Business

- Curriculum
- Weekend Course

2:00

- Strategic Plan

ADJOURN



**MLML Governing Board Meeting  
27 May 2016**

**MINUTES**

**Governing Board Members Attendees:**

Jim Harvey (MLML, Director)  
Kathleen Donahue (MLML Asst. to Director)  
James Lindholm (CSUMB, MLML Governing Board chair)  
Ivano Aiello (MLML, Chair, Geological Oceanography)  
Nick Welschmeyer (MLML, Biological Oceanography)  
Michael Graham (MLML, Phycology and Aquaculture Center)  
Manny Gabet (SJSU)  
Michael Parrish (SJSU)  
Pam Stacks (SJSU)  
Shannon Bros (SJSU)  
Michael Lee (CSU East Bay)  
Jim Murray (CSU East Bay)  
Jason Singley (CSU East Bay)  
Mathieu Richard (CSU Fresno)  
Andrew Lawson (CSUMB)  
Ron Coleman (CSU Sacramento)  
Amy Wagner (CSU Sacramento)

**Additional Attendees:**

Tom Connolly (MLML, Physical Oceanography)  
Colleen Durkin (MLML, Research Faculty)  
Jocelyn Douglas (MLML, Health & Safety Officer)  
Jane Webster (*Schuytema*) (MLML, SJSU State)  
Jeff Arlt (MLML, IT department)  
Sandeep Muju (SJSU Research Foundation)

Start: 9:45am

**Minutes:** Elizabeth Ramsay (MLML, Student Assistant)

\*\*\*\*\*

**James Lindholm:**

Motion to approve minutes from previous meeting; minutes approved.

**Faculty/Staff Updates**

*Jim Harvey and Kathleen Donahue reporting*

- Joan Parker (former MLML Faculty Librarian) retired in January but generously agreed to remain on contract to consult and assist MLML until the new Librarian, Katie Lage arrives in July. Katie is moving to MLML from the University of Colorado Boulder's Earth Science Library and is bringing her experience with GIS and spatial data to the MLML community.
- MLML hired Captain Brian Ackerman as the Marine Operations Manager. Brian Ackerman was selected because of his long history with local marine research vessel operations experience. MLML is on a trajectory to acquire a new, larger vessel. Brian brings a wealth of knowledge and experience as a captain in our local waters, retrofitting research boats, scoping out potential research vessel requirements, outfitting boats as well as running his own charter boat business out of Moss Landing. Brian led the MBARI team for bringing the R/V Rachel Carson into the MBARI fleet.

**Background**

When NSF and UNOLS decided to retire the R/V Pt. Sur, MLML was forced to sell her to the University of Southern Mississippi (USM). The vessel was turned over in perfect, turn-key condition as a resource, ready to launch. Harvey pointed out this was why MLML fought so hard to keep the R/V Pt. Sur. The USM was very appreciative and report that the vessel is exceeding their expectations. With the loss of the Pt. Sur, MLML had to let all the crew and the Marine Superintendent go. This left a small staff to run Small Boats. JD Douglas has done an extraordinary job of keeping MLML's Small Boat Operations going by acting as Coordinator and Captain.

- MLML hired a new Help Desk Administrator in the ITech Department, Michael Radojovic
- Dr. Michael Lee from CSU East Bay will be the Visiting Scientist at MLML during AY16-17. He is actively engaged with the Center for Aquaculture so his appointment will primarily consist of working to develop the Center's capabilities.
- Dr. Patrick Gagnon, a Benthic Ecologist from Memorial University in Newfoundland will join the MLML community as an International Scholar in Ay16-17
- There have been no consortium applicants for the Visiting Scientist AY17-18. The posting was expended until 1 August. Only 3 candidates have applied to date, all are



from outside the CSU. MLML aims to advertise for the Visiting Scientist opportunity well in advance (2 academic years in advance) so that interested CSU Faculty planning for sabbaticals have enough lead time to make arrangements with their home campus.

- Aiello and Harvey discussed additional researcher affiliations with MLML and explained that oftentimes scientists from the outside CSU are seeking Post-Doc opportunities, they are not Faculty at any institutions so having PI status at MLML provides them an avenue to apply for research grants.. Former and current candidates offer unique and qualifying backgrounds such as Iliana Ruiz-Cooley from UCSC who works with food webs and stable isotopes and is interested in managing or advising graduate students. She will be working at MLML as a base for applying for grants to support her work. Others could broaden the diversity at MLML.
- Dr. Rick Starr, MLML Research Faculty Member and 30+ year appointment as the CA Sea Grant Specialist onsite will be retiring from CA Sea Grant in July. He will remain on as a Research Faculty member at MLML continuing his research using fish tagging to understand the ranges of fishes.
- This creates a gap at MLML. They still want a specialist here so MLML proposed bringing a person with a strong background in Aquaculture. Although MLML is losing Rick Starr, they will be gaining a specialist in the field of Aquaculture; an area they growing.
- The new Aquaculture Specialist will be funded 75% by CA Sea Grant at UC San Diego and 25% by MLML. The new specialist will teach and mentor students. The position will be posted at the end of summer 2016, recruitment will be conducted in the Fall and Winter with the start date in Summer 2017. MLML and CA Sea Grant is expecting a large pool of candidates as this is a burgeoning area and MLML has recently opened a Center for Aquaculture which it intends to be a state-of-the-art facility.

## **MLML Graduate Program**

*Jim Harvey*

- The Governing Board packet contains details on FTE's
- Spring 2015 = 71 registered graduate students, 3 undergraduates
- This pattern has been consistent for the last 3-4 academic years
- Bulk of students continue to come from SJSU and CSUMB because most potential students choose the campus that is located closest to MLML
- MLML needs to conduct outreach at the other consortium campuses to attract students from the other consortium campuses.
- New/potential students are informed about benefits to applying through other consortium campuses besides SJSU and CSUMB and those advantages are also listed on the MLML Graduate program website
- MLML's Graduate program Coordinator has built strong connections to the Registrars at the consortium campuses and makes sure students are aware that they do not need to visit

their home campus; she can handle any business required while they are enrolled at MLML

- Graham pointed out that information about the other campuses is not up to date so when a new student investigates these options they are misinformed so MLML faculty are hesitant to promote advantages of applying through other campuses.
- Also discussed and considered was the value of choosing one campus over another and who gets the student fees
- Harvey explained that MLML keeps much of these details nebulous online to avoid emphasizing that is also cheaper to apply through certain campuses versus others and he wants to continue making regular visits to the consortium campuses to increase recruitment
- All agreed this illustrates the complexities of MLML
- Having onsite advising POC's representing MLML could both increase awareness and applicants, creating a stronger connection between MLML and the consortium campuses.

**ACTION ITEM:** Identify 1-2 POC's at each campus, Kathleen will collect and distribute

- Enrollment is down by about 10% due, in part, to new Faculty who are just starting and, secondly, because MLML is pushing students out faster
- Enrollment should increase over time as new Faculty get their labs and research going and attract new students
- Funding for graduate students continues to be a challenge
- The AY15-16 Scholarship reception was a huge success, this year students gave in depth talks about the research the awards will support
- The donors were extremely appreciative and many expressed how little they actually knew about what students were working on and enjoyed the presentations

**ACTION ITEM:** Add amounts of awards to Graduate program report and send to Governing Board

**ACTION ITEM:** Invite Governing Board to future Scholarship Award receptions

## **Digital Learning – New Online Course**

*Ivano Aiello*

Ivano Aiello presented the model for an online course on basic oceanography being developed in order to collect feedback and gauge interest from the Governing Board. He seeks ideas and collaborations from the consortium campuses.

- This online course in basic oceanography using the Monterey Bay as the emphasis will be a great way to recruit new students and familiarize them with all disciplines of marine sciences.
- It can serve as a mechanism to expand MLML's reach and publicize it to a wider audience throughout CSU.
- The goal is offer this course in Fall 2017 as GE but first requires the Board's approval.

- MLML did thorough research to ensure the course does not overlap with courses being taught by consortium campuses.
- The online course design contains multi-media, animations, and an interactive roadmap so students can choose the area of study to work on; each area linking to the others so that students can learn about the interaction of land-sea interfaces and how these processes are interconnected.
- The course will be taught by 2 Faculty members and will be a self-contained module in two parts: Content and Lab/Tests, including virtual and real field trips. \
- Students will be tasked with taking a field trip in their own community to observe nature and report back.
- Content will include open source materials from NOAA, USGS, and other NGO's and be shared with the consortium.
- The course will also require students to come to Moss Landing for the weekend to attend lectures, go on more field trips, get out on the boats and work in the lab.
- Students will be housed in the Seminar Room.
- The course will not affect FTE's, the teaching load is minimal.

There was discussion about how MLML courses are approved and it was confirmed that they get vetted by the MLML Governing Board. It was pointed out that the CSU system for classifying GE courses is nuanced and should be considered as this course is developed. Treating it as a transfer course could alleviate this challenge. MLML can ask that the GE specialist at each consortium campus review the course to make it sure it will qualify as GE. Some Board members suggested making it a one-day course that would make coming to MLML easier and could attract hundreds of undergrads. Richaud reminded the group that MLML must remain a graduate school, therefore, the course capacity must be capped, the weekend classes need to be two days to be successful and MLML cannot be burdened by teaching 100 undergrads. The distance and remoteness of MLML will be major contributing factor to the course's success.

**ACTION ITEM:** Ivano and Kathleen will distribute the syllabus to the Board.

## **Weekend Course**

*Jim Harvey*

### Background

The weekend course was generated to bring students from other consortium campuses and enjoyed many years of success. The goal is to bring it back:

- It will be offered as a 1 unit course
- 16 hours of instruction: pre-work prior, weekend at MLML, followed by some final assignments after the weekend concludes.
- MLML uses a pre-existing, generic, 1-4 unit course already on the books.
- Will have some lectures but mostly the students will go on field trips

- It differs from the online course in that it focuses on a single discipline of marine science such as marine mammals, the intertidal zone, or geology.
- MLML's ability to teach weekend courses is useful to maintain a connection to the consortium campuses.
- Traditionally it has been co-taught by MLML Faculty but MLML is proposing that consortium campus faculty consider teaching too.
- WTU's would go to consortium campus Faculty.
- MLML wants to identify the 1<sup>st</sup> weekend that this course would be taught and the discipline that would be taught.

The Board members discussed if this could also be a platform for the distance learning effort and interest in co-teaching was gauged.

**ACTION ITEM:** Board members will provide input to MLML on what they think the course should look like and their faculty requirements for 1 WTU.

## **Center For Aquaculture**

*Jim Harvey*

### Background

A number of years ago, Dr. Kenneth Coale (MLML) received a Packard grant to rebuild MLML after the earthquake. Some of those funds were used to build the current Aquaculture Facility where the previous shore lab was located.. The vision is to have a bigger, more robust aquaculture program that involves all CSU campuses and other stakeholders including private industry. The concept for its capabilities and mission will be to broaden and incorporate education, research, and policy in aquaculture.

- MLML submitted a proposal through SJSU to be considered as an Organized Research and Training Unit (ORTU) so that the facility can be officially called the "Center for Aquaculture"(CFA), emphasis being on a "Center" for all CSU campuses.
- Goal is to build robust partnerships with federal and state agencies, NGO's, academia, private industry.
- Mike Graham informed the board that all of the consortium campuses were surveyed about their interest in aquaculture studies and education, they were invited to the January COAST and Sea Grant funded meeting and that many participated. Overall feedback from the surveys was very supportive of the CSU-wide concept.
- MLML is starting to develop the infrastructure both at the CFA and elsewhere to work on aquaculture research and policy in this region.
- CSU does not currently have a good model to support a CSU-wide consortium.
- Curriculum development will follow, thinking broadly in terms of economics, business, nutrition – all integrated and demonstrating interconnectedness.
- Graham described MLML's goal to make the CFA a one-stop shop with no redundancy and to leverage programs for a greater impact in an integrated manner.

The discussion that followed focused on ways to engage private industry such as memberships to the CFA and forming a steering committee that reflects a CSU-emphasis.

## **SJSU-CSUMB**

*Jim Harvey*

### Background

In Fall 2014 CSUMB's President, Eduardo Ochoa, and SJSU's President, Mo Qayoumi, interacted with the CSU Chancellor to discuss MLML moving its administrative campus to CSUMB. CSUMB President Ochoa declared his desire to take over administration of MLML. ] SJSU has always been the administrative campus for MLML but the By Laws state that any campus can lobby to be the administrative campus. It is expected that the Chancellor will not be revisiting the issue until the new SJSU President is settled in. At the Fall 2015 Governing Board meeting it was decided that the MLML Governing Board would submit a letter to the Chancellor requesting that the Governing Board be a part of this discussion.

- Harvey confirmed that the letter was sent via current SJSU Interim President Martin to Chancellor White but there has been no response.
- Harvey pointed out that MLML is a consortium of CSU campuses, but in reality is very much an SJSU department with Faculty and Staff who are heavily invested in retirement plans at SJSU, all of MLML research funding is held at SJSU, SJSU or the Research Foundation owns MLML boats, vehicles, and properties.
- MLML started out having students and Faculty from all seven campuses but evolved over time to where all Faculty being appointed through SJSU.
- Harvey pointed out that MLML is looking to change back to a model that supports all consortium campuses and make a stronger connection to the consortium campuses and not be so SJSU-centric.
- Stacks reported that the Chancellor has five new Presidents and is methodically building a new team. SJSU invited the Chancellor to campus and he gave a very positive pep talk, he talked about how much student success is tied to research and his talk emphasized the need to optimize resources. Stacks advised MLML to capitalize on this new theme by continuing to connect the Chancellor's office with MLML's value to CSU. The CFA can be a perfect model to illustrate this..
- Dean Parrish concurred saying Interim President Martin has discussed the issue with incoming president Mary Papazian and he will work with Stacks to urge President Papazian to be involved in the decision.

*Lunch Break: 1200-1300*

## **BUDGET REPORT**

*Jim Harvey and Kathleen Donahue*

### Background

MLML has an operating budget that includes funds through SJSU, the partial return from indirect costs generated by grants through the Research Foundation, and donations through the Tower Foundation. The operating budget is complicated and complex because MLML is a research-oriented facility that is a hybrid operation supported by both SJSU and grant funded personnel. Furthermore, MLML is not operated like a typical campus. For example, MLML has its own Science Library.

- This academic year the Dry Classroom was remodeled to be more modern and functional and the Norte building had to get a new roof.
- MLML also gave the support staff cost of living increases out of their existing operating budget, and several SJSU staff received increases through CSU/union negotiations.

### *State budget:*

A large portion of this budget goes toward Faculty and staff salaries and benefits. A little money funds the visiting scientist. Each consortium member pays in \$4,200 which goes to funding the visiting scientist. CSUMB pays \$50,000 for additional use of MLML. This budget also encompasses faculty start-ups, administration, instructional supplies, the science diving program, health and safety, facilities, IT services, marine operations, utilities, and library services. Only half the library costs are represented here. MBARI funds the additional half (approximately \$100,000).

### *Research Foundation:*

All grant money awarded to MLML goes through the SJSU Research Foundation. MLML produces about one-third of the contracts and grant activity at SJSU (\$15-17 million). MLML gets three sources of income through the Research Foundation:

1. F&A Return which fluctuates from year to year based on MLML's performance/awarded grants
2. Annual funding the Research Foundation provides MLML to cover support costs for research administration, IT, and facilities.
3. Rental income from MLML properties. MLML has two houses they rent to visiting faculty and students and they rent one of the docks to the Del Mar Seafood Company.

The F&A Return projected for next fiscal year is only a third of what MLML requires to operate so MLML will have to dip into reserves to supplement salaries and operational services.

- Sandeep Muju pointed out that you have to spend money to make money. (i.e. one year MLML spends a lot so the Research Foundation costs go up but the next year MLML makes more so the research Foundation costs go down).
- Harvey reported that MLML brings in an average of \$17 million in awards, there is some variability but the trend over 5 years has been consistent.

- Donahue and Harvey also reported to the Governing Board that they used about half of the MLML reserves to purchase an instrument for the WPCL group housed at the CA Fish and Wildlife HQ in Rancho Cordova who perform analytics on water pollution.
- WPCL brings in about \$2-\$3 million in contracts per year, but they had no funds for the new instrument - all of their indirect cost recoveries are given to MLML.
- The new machine will pay for itself over 4-5 years, a good ROI.

## **MLML 50th Anniversary**

*Jim Harvey and Kathleen Donahue*

In 2016 MLML will be 50 years old. A large event is planned for August of 2016. On the evening of Friday August 5th there will be an exclusive party for the Chancellor, Congressman, CSU Presidents, MLML Governing Board and potential high level donors. Saturday August 6th will have a mini-Open House for alumni, former and current faculty and staff to attend. On the Saturday evening there will be a large BBQ party with live bands in the field at the bottom of the hill. MLML has been producing a 50th Anniversary blog on the MLML website. The weekly blog posts are fun and insightful looks into the history of the lab. Governing Board members are encouraged to read them and attend the festivities.

- Harvey reported that MLML raised \$16,000 to produce a commemorative book which will incorporate photos and pieces from the weekend event. The book is expected to be produced at the end of 2016.
- MLML was encouraged by SJSU Advancement to use their crowdfunding page to launch a campaign for new Library furniture which ended up raising over \$14,000. The page included a short video produced by Donahue showing pictures of the same furniture over 35 years that originally came to MLML from a jail. With these funds, MLML hopes to purchase chairs and tables worthy of the beautiful spaces in the MLML Science Library.

## **MLML Web and Media**

*Jim Harvey and Kathleen Donahue*

- MLML has formed a Web Committee to spread the work needed to revamp MLML's web presence
- The website should reflect the complexity of the lab to the public and potential students
- The difference between Faculty, Research Faculty, and Research Affiliates should be clear
- MLML IT will work with the new Librarian to propose a new digital media management system to the Faculty that captures and catalogues images and videos.
- This new system will be managed in a way that can be easily accessed

The Governing Board raised concerns about intellectual property and student's thesis work being used by MLML. Stacks reported that the CSU is developing an overarching policy so no changes should be made. All agreed that at a certain point the CSU must vet the policy through the Student and Faculty unions.



**Action Item:** The MLML Graduate Program Coordinator will ensure students sign a contract stating they acknowledge the “your data is our data” policy and that Federally-funded student work is open-source.

### **MLML Film**

*Jim Harvey*

Harvey screened the six-minute outreach film MLML produced and asked the Governing Board members for feedback. The film will be used to recruit new students, as an outreach tool, to solicit donors, and to communicate to the CSU community and general public what the MLML are, what they do, and highlight their proximity to the Monterey Bay.

### **CSC Proposal**

*Jim Harvey*

MLML is applying for an NSF grant to be designated as a CSC; these funds award campuses that introduce science, especially the marine sciences, to under-represented students. The award will fund 5-6 students per year for 15 years.

- This will aid recruitment in oceanography, a subject area where it is challenging to attract new students with no promise of funding when they can get support at a different graduate school.
- This award and the 5-6 students funded will stimulate all the oceanography programs at MLML

### **New Governing Board Chair**

*James Lindholm*

James Lindholm’s term as Chair of the MLML Governing Board is up. The Chair serves for two years. Harvey nominated Michael Lee from CSU East Bay. He will be the Visiting Scientist at MLML in AY16-17, he is already active and engaged with the CFA and MLML students. Graham nominated Mathieu Richaud from CSU Fresno for Vice Chair. He is a vocal supporter of MLML, maintains strong ties with the faculty and has been serving on the Governing Board for several years.

Lindholm called a motion to accept the nominations by acclimation.

- None opposed.
- Motion accepted.

**Action Item:** Updated list of members will be distributed by MLML along with the Minutes.



## MLML By Laws (BL) and Rules of Operation (ROO)

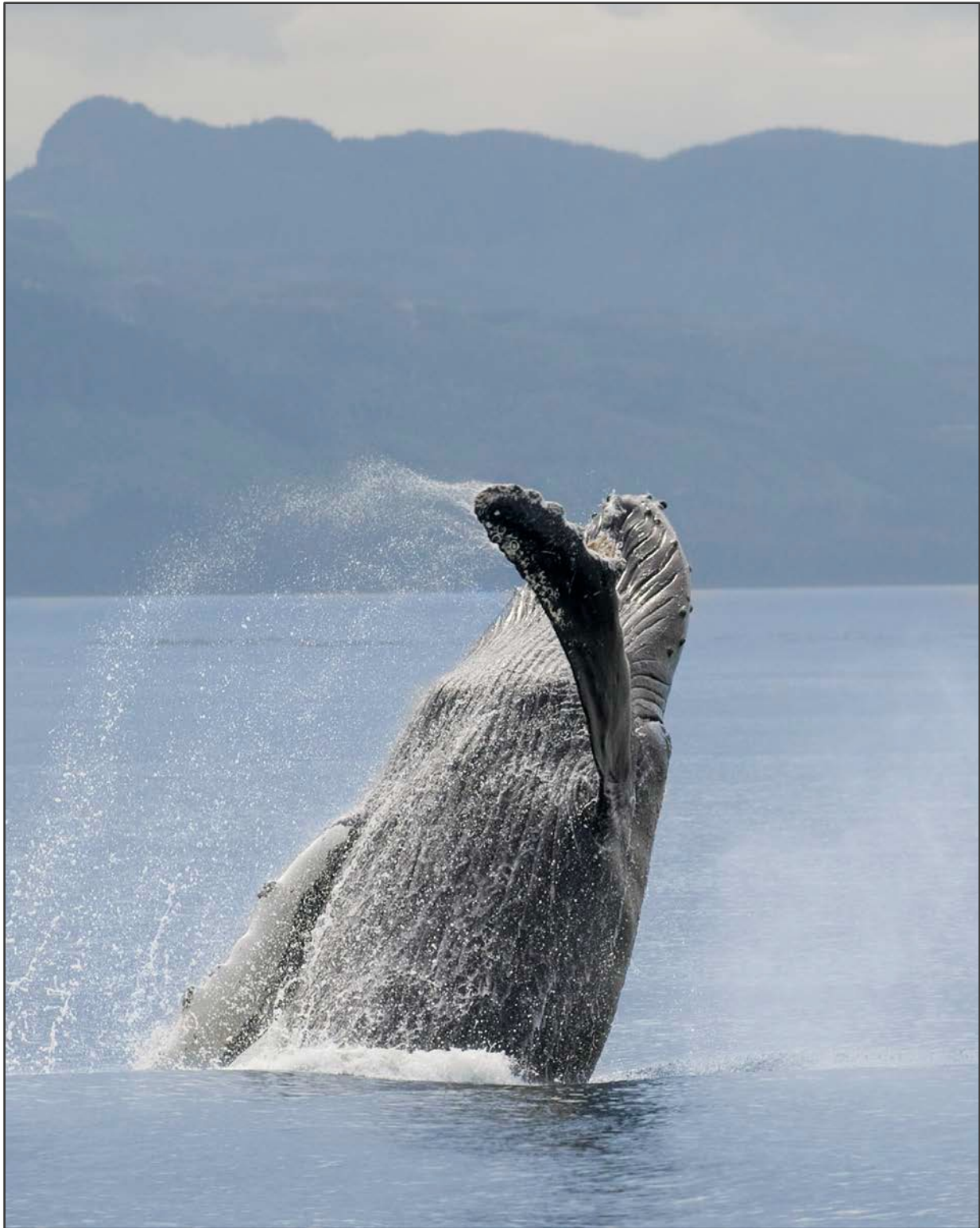
### *All Members*

Discussion followed a motion to accept new Chair and Vice Chair about reviewing the By Laws and Rules Of Operation. These documents have not been changed since 2007. When MLML submitted their Annual Report to the Chancellor's Office in Fall 2015, they pointed out that MLML's BL and ROO contain no mechanism to dissolve and need to be fixed. Harvey drafted a paragraph to address this issue and it was immediately rejected by the Chancellor's Office. The Board members proposed forming the following review committee who will draft proposed amendments:

Harvey  
Dean Parrish  
Lindholm  
Lee

**Action Item:** The review Committee will submit revised renditions of the BL and ROO to the Governing Board prior to the Fall 2016 meeting. The Board will vote at that time to accept and amend. The Governing Board will seek guidance from the CSU General Counsel prior to finalizing.

*1445: Meeting Adjourned*



**MOSS LANDING MARINE LABORATORIES**  
**ANNUAL REPORT: ACADEMIC YEAR 2015-2016**



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## Executive Summary 2015-2016

Moss Landing Marine Laboratories (MLML) administers the Master of Science in marine science program for California State Universities (CSU) in northern and central California, and is dedicated to the pursuit of excellence in both education and research. An outfitted marine operations department, active research diving program and state of the art equipment allow for cutting edge research in a wide variety of disciplines including: marine ecology; biology of marine plants, invertebrates, fishes, turtles, birds and mammals; oceanography and marine geology; chemistry and biogeochemistry. MLML is known for a hands-on, field-oriented approach, which places our students, faculty, researchers and staff at the frontiers of marine science worldwide where discoveries are being made. MLML provides the skills and training so students will become successful scientists, teachers and resource managers serving societal needs involving marine issues.

MLML had a dynamic year with the addition of two new faculty members and six new research affiliates. Marine operations are evolving in new directions given the loss of the R/V Point Sur, a new five-year strategic plan is under development, and strategies for a major fund-raising effort are underway in collaboration with our administrative campus, San José State University (SJSU). A new online general education course in Oceanography will greatly expand our educational connection with undergraduates at the consortium campuses.

Future plans include development of a 5-yr Strategic Plan, a new GE Oceanography course, a proposal to develop a Center For Aquaculture, planning for a new research vessel in collaboration with UCSD, and a large fund-raising effort with support from SJSU Advancement.



# Mission & Goals

## *Mission*

The mission of MLML is to provision the marine scientists of the future. This means that undergraduate and graduate students are provided with unparalleled access to faculty advisors and teachers, research facilities, and an incredible local marine environment.

## *Goals*

Our primary goal is to provide students with the necessary skills to succeed in academia, governmental agencies, conservation, and management. The following describes how we have met our specific goals during the past year.

### **Goal One: Provide skills in communication, analytical computation, marine science literacy, critical thinking, and technical aspects of their discipline.**

We continue to revamp our courses to better serve the changing needs of the students to keep pace with the evolving job market. This requires constant vigilance regarding the necessary skills of science, conservation, and policy. Primary among these skills are communication and analytical tools. We have developed new courses to better tailor our analytical courses with the various disciplines of marine science (i.e. oceanography and marine biology). The analytical methods used by oceanographers are somewhat different than those used by biologists, so we have tried to create courses that serve both disciplines. We also have restructured course material to continue stressing critical thinking, which is a foundational skill in sciences. With new faculty, new course material, and new use of technology, we continue to provide influential material for the various disciplines covered by the M.S. degree in marine science at MLML. We continue to assess this goal based on the quality of the Master's Thesis that is generated by all our M.S. students. We have assessed this qualitatively but we are generating a rubric to more quantitatively assess this goal.

### **Goal Two: Graduate students should obtain an M.S. degree within 3 years of entry into the program.**

Because our M.S. degree in marine science is field based, it requires a fair amount of time to devise, assemble, conduct, and analyze research in the field setting. The vagaries of weather, equipment, changing sea conditions, and lack of financial support cause delays and greater effort. These characteristics make it difficult to achieve graduation in three years or less. MLML faculty and administration are committed to continuing to support student success by reducing the time it takes our students to complete their M.S. degree. During AY 2015-2016, we analyzed the time-to-degree data for all MLML alumni who had graduated within the previous four years, and found that the average time-to-degree for 2015 graduates had fallen to approximately 4 years since entry in the MLML program, down from an average time-to-degree of 6 years for 2013 graduates. While our hands-on, laboratory and field-oriented approach to our curriculum acknowledges unpredictability (of sea and environmental conditions, etc.), we continue working towards our goal of an average time-to-degree of 3 years by evaluating potential initiatives including, but not limited to, refining the process of thesis proposal development and approval, revising the process of thesis draft submission and approval, and increasing funding opportunities to offset our students' financial burdens.



**Goal Three: Provide a broad, multidisciplinary understanding of marine science and the current issues of our time.**

We have largely achieved this goal by offering basic courses in the major disciplines coupled with specialty courses in relevant issues of the day. These special courses include: Climate Change, Coastal Erosion and Habitat Mapping, Cycling of Trace Metals and Nutrients in the Coastal Zone, Modeling Marine Systems, and Ocean Acidification. We also have incorporated these concepts into the core courses (e.g. Physical Oceanography, Geological Oceanography, Chemical Oceanography, Biological Oceanography, and Marine Ecology). We have not assessed this goal recently via our course rubrics, but we will in the near future.

**Goal Four: Solve problems of societal relevance.**

We have largely reached this goal by partnering with MARINE (Monterey Area Research Institutions Network for Education), which is a collaboration between the Center for Ocean Solutions at Stanford University and seven Monterey Bay area academic campuses, including MLML. This assortment of educational institutions provides a forum for a variety of events that provide leadership development and education for students at MLML, helping create the marine science leaders for the future. The primary topics include: climate change, ecosystem health, and land-sea interactions. MLML recently helped develop and taught a regional course regarding the impacts of vessels on whales which was attended by students from MLML, Naval Postgraduate School, Middlebury Institute for International Studies, Stanford University, and CSU Monterey Bay.



MLML has largely met its four goals of (1) improving the scientific and communication skills of our graduate students, (2) decreasing the time until graduation, (3) broadening student understanding of current issues of our time, and (4) discussing and solving problems of societal relevance. We are in the final stages of establishing a (proposed) Center For Aquaculture at SJSU and the consortium, with the eventual goal that this Center would represent the entire CSU.

MLML operates with about \$3.6 million from the State (CSU, SJSU, and consortium campuses), an average of \$500,000 indirect costs returned from contracts and grants administered by San José State University Research Foundation (SJSURF), and \$190,000 of administration and facility supplemental funding issued to

MLML by the SJSURF. The administrative campus of the MLML consortium, SJSU, does not extract any indirect costs generated by MLML because the MLML campus has a number of expenses (e.g. library, vessels, vehicles, diving, IT, safety) that cannot be covered by services at SJSU. During AY 15-16, MLML researchers acquired 90 grants and awards totaling \$16.7 million, and produced 155 scientific publications.

MLML provides a world-class Master's program in marine science, and is the only multi-campus entity in the CSU that offers a curriculum and a Master's degree program. Although undergraduate and graduate students attend courses at MLML, in AY 15-16 87% (n=71) of the 81 students were graduate students. In AY 15-16, most of the graduate students matriculated through CSUMB (n=41) and SJSU (n=30) with the student fees paid to the campus of matriculation.

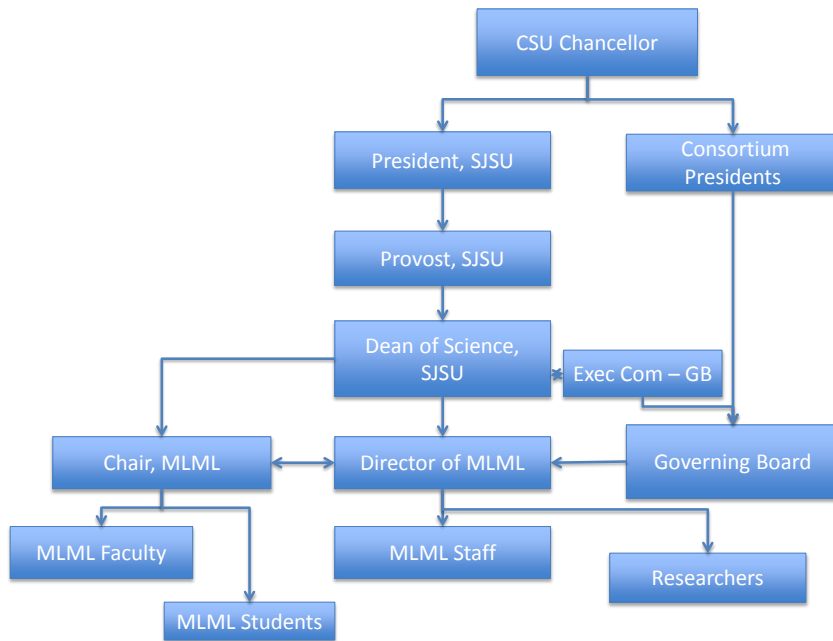
Some of the successes of the year included 12 students graduating with a M.S. degree, a dynamic MLML Open House with more than 1,800 of the public visiting MLML during a weekend in April, \$20,500 in scholarships and awards presented to students, and MLML celebrating its 50th anniversary. The highlight of the 50th Anniversary was the return of at least 350 alumni (more than 50% of graduates) to MLML for a weekend celebration.



# Organization & Governance

## Organization

The organization of MLML within the larger CSU system is documented below. MLML's internal organization is displayed below that. MLML Director Jim Harvey reports directly to Dean Michael Parrish, College of Science, SJSU.



<b>Director</b> Jim Harvey		<b>Nine Faculty</b>
	→ <b>Faculty Chair</b> Ivano Aiello	<b>Librarian – Katie Lage</b>
	→ <b>Assistant to the Director</b> <i>Academic Program and Operations</i> Kathleen Donahue	<b>Ten Faculty Researchers</b> Information Technology - Jeffry Arit, Rhett Frantz, Michael Radojevic Graduate Program Coordinator – Terra Eggink Financial Management SJSU – Jane Webster Financial Management SJSURF – Michelle Keefe Environmental Health and Safety – Jocelyn Douglas Scientific Diving Safety Officer– Diana Steller Facilities Manager - Gary Adams <b>Facility Technicians</b> – James Cochran, William Cochran, Kris Machado
	→ <b>Marine Operations Manager</b> Captain Brian Ackerman	<b>Administrative Assistant - Kate Sawyers</b> <b>Small Boats Coordinator – Captain John Douglas</b> <b>Deckhand/Technician – Jackson Winn</b>
	→ <b>Assistant to the Director</b> <i>Development, Strategic Planning</i> Mike Prince	



In some respects MLML operates like a small University campus because it is located one hour south of SJSU, its administrative campus. This distance has required building an infrastructure that mimics many campus resources, such as a library, IT and facility services, health and safety officers, vehicles, and instrument technicians. As a marine laboratory, it also had to provide unique resources that a main campus does not provide: seawater system, diving program, and vessels. Thus the Director oversees an Assistant to the Director, who is responsible for managing daily operations of the laboratory, a Marine Operations Manager, an IT manager, and a person who assists with Development and Strategic Planning. The Director also works closely with the Chair of the department to assist with academic support.



*(L-R) Dean Parrish, SJSU College of Science with Dr. Welschmeyer, MLML Chemical Oceanography Lab and MJ Donohoe, SJSU Advancement*

## *Governing Board*

The MLML Governing Board (MLML GB) is comprised of faculty members and academic leaders from the seven CSU consortium campuses (A list of the Governing Board members is included in Appendix 4.). The MLML GB provides oversight, and sometimes approval of, various aspects of MLML activities. The MLML GB meets twice per year, in the Fall and Spring semesters, to discuss MLML's academic program, budget, and operations.

Discussions held during the meetings in AY15-16 centered on the loss of the R/V Pt. Sur, student recruitment, the 50<sup>th</sup> Anniversary and changes to the bylaws. A committee was formed to make necessary changes to the bylaws and Rules of Operation for MLML. The changes include new language regarding the dissolution of MLML, as requested by the Chancellor's Office (CO). The committee will provide its recommended changes to the documents by the Fall 2016 meeting and a motion will be made at that meeting to accept the amendments.

## *Governing Board Meetings*

The meeting highlights below document the issues and actions impacting MLML during AY15-16.

### **December 2015 Meeting Highlights:**

- Four new staff and faculty members introduced including the new Physical Oceanographer and Graduate Program Coordinator.
- Recruitment underway for new faculty member to serve as the MLML Science Librarian.
- MLML's Annual Report covering 2012-2015 for the Chancellor's Office was reviewed and discussed.
- Report and updates on the Aquaculture Center facility.
- MLML's 50<sup>th</sup> Anniversary plans.
- Curriculum and academic program reviewed along with discussion about launching online courses and reintroducing weekend courses.

- The continued discussion among SJSU, CSUMB, and the Chancellor's Office regarding the future administrative campus of MLML. The assumption was that there has been a delay in decision-making until the new SJSU President Mary Papazian could be fully informed after her start in July 2016, that MLML and representatives of the consortium would be involved in the deliberations, and that a decision will be made this AY 2016/17.
- The lack of housing at MLML has greatly affecting the ability for consortium campus students to attend courses and for researchers to gain access to MLML resources.
- The loss of the R/V Point Sur has hampered class cruises, access to the ocean by consortium members, and decreased income generated by NSF contracts associated with operating the research vessel. MLML is interested in obtaining another research vessel and the Governing Board members were supportive of efforts to determine whether a new vessel would be appropriate.

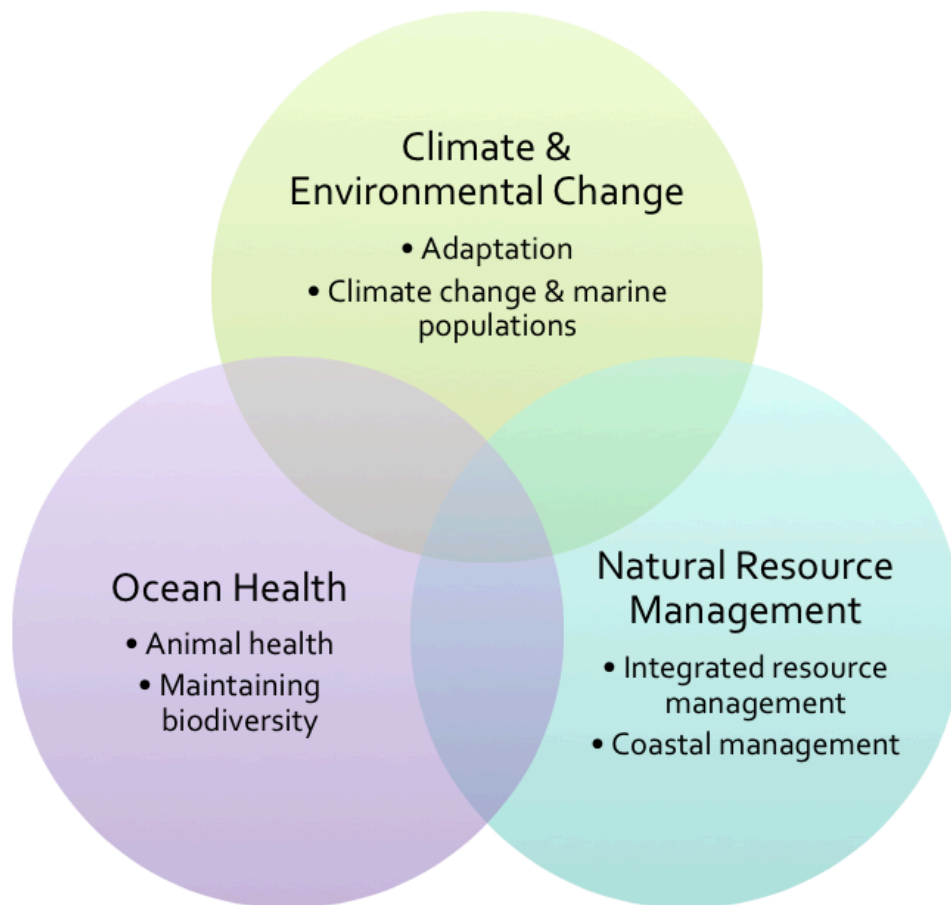
### **May 2016 Meeting Highlights:**

1. New Science Librarian, Katie Lage from Univ. of CO has joined MLML's faculty.
2. Visiting Scientists for AY16-17 introduced: Dr. Michael Lee from CSU East Bay and new visiting scholar Dr. Patrick Gagnon from the Dept. of Ocean Sciences, Memorial University of Newfoundland.
3. Development of a hybrid course in Oceanography emphasizing the environments of Monterey Bay would include online material combined with weekend field trips. Once the course has been developed it will be presented to the Governing Board for discussion and approval before going to each campus for formal approval by each campus.
4. MLML also is developing a few weekend courses. One unit, 2-day experientially based courses in marine science at MLML. These will be available for undergraduates at the consortium campuses.
5. MLML has produced a six-minute film that promotes the lab for prospective students and the general public.
6. Discussion about increasing involvement from consortium campuses by giving talks, holding recruitment fairs, hosting weekend visits for potential graduate students.
7. Online course in Oceanography demonstrated and discussed.
8. Report on Aquaculture Center's meeting sponsored by CSU COAST that brought together representatives from CSU campuses, private industry with local, state and national stakeholders.
9. Changes to the By Laws. A committee was formed to make necessary changes to the By Laws and Rules of Operation for MLML. This will include new language regarding the dissolution of MLML, as requested by the CO. The committee will provide recommended changes to the documents by the Fall 2016 meeting, and hopefully will be approved at that time.



## *MLML and Non-CSU Partners*

MLML collaborates with other research institutions in Central California and with institutions around Monterey Bay. As it was established, the MLML consortium was only an association of CSU campuses, and there may be an addition of other CSU campuses. There have been discussions of developing a joint Ph.D. program with different UC campuses (i.e., UC Santa Cruz and UC Davis). The MLML By Laws do allow non-CSU partners: “In special cases, the MLML Governing Board may also recommend to the Consortium Presidents formal affiliations with institutions outside the CSU for the purpose of promoting the mission of MLML. Examples may include PhD granting universities, research institutions, or other non-commercial collaborative groups, government agencies, or consortia with shared goals and purposes.”



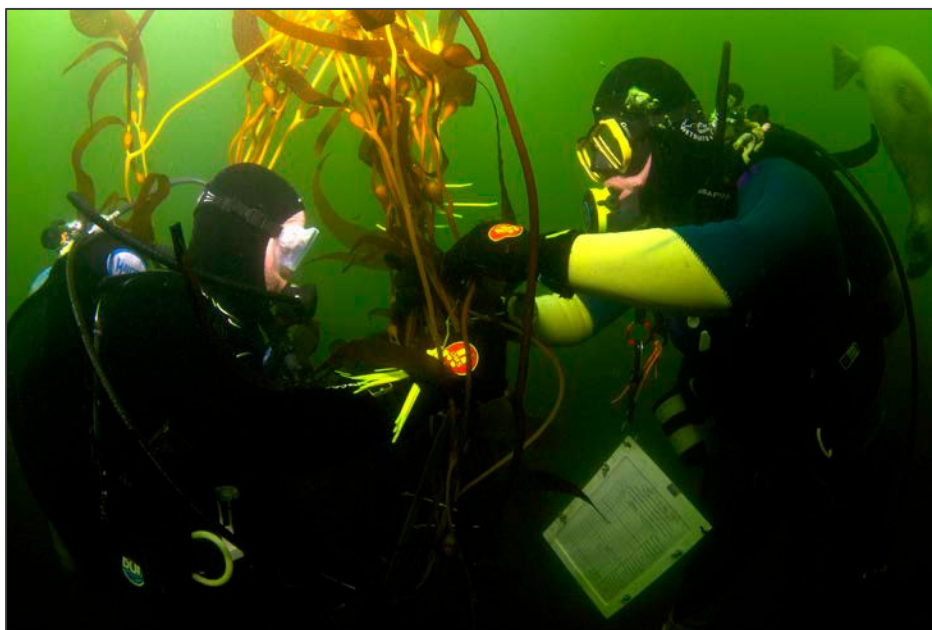
# Operations

MLML is a consortium representing seven CSU campuses: SJSU, CSU Monterey Bay, CSU East Bay, CSU Stanislaus, San Francisco State University, Fresno State, and Sacramento State. The MLML Bylaws allow collaboration with non-CSU partners as well: “In special cases, the MLML Governing Board may also recommend to the Consortium Presidents formal affiliations with institutions outside the CSU for the purpose of promoting the mission of MLML. MLML collaborates with other research institutions in Central California and particularly with institutions around Monterey Bay. Examples may include Ph.D. granting universities, research institutions, or other non-commercial collaborative groups, government agencies, or consortia with shared goals and purposes.” There have been discussions of developing a joint Ph.D. program with different UC campuses (i.e., UC Santa Cruz and UC Davis).

*For additional information, please see the Organization & Governance section on page 39.*

## *Scientific Diving Program*

The MLML diving program trains and supports our AAUS (American Academy of Underwater Sciences) divers to safely and productively conduct underwater research. The program has overseen an increasing number of research dives annually with student researchers conducting the majority of these dives. A team of these divers has contributed to the coastal California sampling by Reef Check California; a protocol that is taught in our research diving courses. The program strives to advance underwater research productively and safely.



*Students Mike Fox and Jasmine Ruvalcaba from the Phycology Lab tagging kelp for growth and distribution studies*

## *MLML/MBARI Research Library*

The MLML/MBARI Research Library is a joint library shared with the Monterey Bay Aquarium Research Institute (MBARI). MLML's public-private partnership with MBARI maximizes the resources of both institutions to create a world-class library that supports research and teaching in fisheries, marine birds and mammals, invertebrate zoology, oceanography, ecology, molecular biology, biogeochemistry, toxicology, marine geology, marine chemistry, and deep-sea biology. The library portfolio includes MLML's Digital Commons, an institutional repository that provides access to Master's Theses, publications by MLML-affiliated authors, institutional records, and an image archive. During the year, the MLML/MBARI Research Library joined a collaborative project led by the CSU Libraries and the Chancellor's Office to create a Unified Library Management System (ULMS). This new collaborative library services platform will streamline back-end workflows as well as allow for easier discovery and access to our library resources, SJSU King Library resources, and CSU system-wide resources. Lage attended a ULMS training at King Library (a "vanguard library" in the system migration) and will continue to look to King Library for insights and collaboration opportunities.

Professor Joan Parker, long-time librarian at MLML, retired in December of 2015. Kathryn (Katie) Lage started as our new librarian on 1 July 2016.

In addition, SJSU's Advancement team worked with the Friends of MLML to set up a crowdfunding page to raise money to replace the worn and tired furniture (which had been donated by a local jail 35 years earlier). The response from alumni and friends was overwhelming with almost \$15,000 raised over a two-month period. The upgrade created a more user-friendly, studios and beautiful space to foster academic and research collaboration in the library, which now features scientific artwork highlighting MLML research.



*Library circa 1984*



*Library circa 2016*



## *Marine Operations*

Moss Landing Marine Laboratories Marine Operations continues to serve a wide variety of research efforts. MLML research vessels have assisted in tagging leatherback turtles off the Farallon Islands (Benson), deployed artificial kelp forests in Carmel Bay (Cunningham), conducted water quality assessments during the demolition of the San Francisco Bay Bridge (Cal-Trans), and measured CTD profiles at Cal American's slant well in south Monterey Bay (AMS). We supported MLML grad students in data collections for their thesis work in the Elkhorn Slough and Monterey Bay and offered our resources to all our consortium campuses. In AY2015-16:

- R/V John H Martin completed 45 cruises
- R/V Sheila B completed 17 cruises
- Whaler fleet completed 302 cruises

The future brings the possibility of exciting developments for Marine Operations. We are in preliminary talks with UCSD Scripps Institution of Oceanography (SIO) in a joint effort to replace the R/V Point Sur (MLML) and R/V Gordon Sproul (SIO) with a shared 49-m vessel that would serve the State of California. We are also studying the feasibility of replacing the R/V John Martin with a somewhat larger, more capable ship of about 27 meters. This vessel would be event responsive, able to lift and deploy heavier packages, support class cruises and multi-day operations, yet still be of a size that could be managed by a small crew. Preliminary surveys indicate that such a vessel may see as much as 190 days of use per year.

If MLML were able to acquire these bigger vessels, we would have to renovate the Del Mar wharf and surrounding property to accommodate berthing. The acquisition of new ships and development of our facilities will better serve our students and the greater oceanographic community, and cement Moss Landing Marine Laboratories' reputation as a premier research institution on the West Coast.



*Research Vessel John H. Martin*

## *Museum and Digital Archive*

The MLML Museum houses many specimens of birds, mammals, turtles, fishes, and invertebrates. In addition, it contains a herbarium collection of marine macrophyte (algae and plant) pressings. The collection contains at least 11,000 accessioned biological specimens, with ~75% housed in research collections and ~25% in teaching collections.

This is a unique collection focusing on the biota of the Monterey Bay, collected during the last 50 years. It represents a thorough sampling of the flora and fauna of Monterey Bay and the larger sub-tropical and temperate northeast Pacific region (Baja California, California, Oregon, and Washington).

Recent improvements include; 1) reorganization of specimens, using compact storage units; 2) improving the care of specimens, including renewing preservation fluids and standardizing specimen storage containers; 3) updating of digital data files on the holdings; and 4) taking digital images of specimens.

The latest project is a collaboration with MLML Library and IT groups to utilize Darwin Core (a metadata standard for biological records) to make the MLML Museum collection available online via the MLML website. This searchable database will include links to photos and metadata, allowing scientists easy and complete access to the collection.



*Left: Student Heather Hawk from the Invertebrate Zoology Lab*

*Right: Lobby display cases featuring specimens from current research*

## *Proposal for a new Center For Aquaculture*

MLML has proposed a new Center For Aquaculture, which we expect will serve the consortium, the CSU, and the entire state of California. After sponsoring a meeting in January 2016 of representatives from all 23 CSU campuses, state and federal agencies, industry, and other interested organizations, MLML officially applied to SJSU to form a new ORTU (Organized Research and Training Unit), called the Center For Aquaculture. After the Packard Foundation helped to construct the new Aquaculture building in 2015, MLML has been writing proposals and seeking support to greatly expand the infrastructure and capabilities of the facility. This year's (2016/17) MLML Visiting Scientist, Michael Lee (CSU East Bay), will help develop partnerships and assist with the organization of a future curriculum and degree program in aquaculture. CA Sea Grant is hiring a new Extension Specialist that will reside at MLML and will be an aquaculture specialist enhancing the program.



*New aquaculture building in background, with white rectangular tanks for raising abalone in foreground, round white tanks for algae, and blue tanks used for fishes.*



# Financials

MLML is supported by annual academic appropriations from SJSU, administered by the College of Science. The State support of MLML is completely funded via General Funds; all the tuition (student) fees are paid to the campus in which the student is enrolled. We supplement our operational costs with funds from the Facilities and Administration revenue (F&A) generated by our grants and contracts. The SJSU Research Foundation returns a portion of the F&A during the academic year, as such:

- 10% of our F&A goes to each Principal Investigator,
- 10% goes into a Reserve Account MLML set up for capital planning and for withstanding budget shortages and;
- 10% goes into an account for repaying a loan to SJSURF (Resolution 198).
- 70% remains to support research infrastructure
- SJSURF also provides MLML with \$190k in supplemental funding to support research administration and facilities because MLML does not benefit from the existing campus support in San Jose.

Academic Year	# of Grants Awarded	Total \$\$ Awarded	F&A Generated	70% F&A Return for Ops
AY15-16	82	\$16,724,109	\$2,032,712	\$622,026
AY14-15	85	\$7,052,005	\$2,486,928	\$471,202
AY13-14	116	\$21,424,577	\$2,201,622	\$322,070

Between AY2013 and AY2016, MLML's research operations and administration were typically supported with about \$500,000 to \$600,000 from the F&A generated by our grants. In the FY15-16 SJSURF returned an additional \$200,000, which was saved and rolled to FY16-17 to cover anticipated shortfall in F&A return expected in AY16-17.

FUNDING SOURCE	2013-2014	2014-2015	2015-2016	2016-2017 (estimated)
<b>Funding from SJSU CoS</b>	\$3.4 mill	\$3.6 mill	\$3.6 mill	\$3.5 mill
<b>SJSURF 70% of F&amp;A Return</b>	\$321,950	\$471,202	\$376,809	\$264,462
<b>SJSURF Fac/Admin Support</b>	\$188,064	\$196,416	\$189,011	\$190,000
<b>*Revenue Income &amp; Donations</b>	\$564,827	\$540,852	\$745,740	<i>tbd</i>
<b>TOTAL OPERATING BUDGET:</b>	\$4.1 mill	\$4.4 mill	\$4.9 mill	\$4.1 mill

*\*MLML generates additional funding via donations through the Tower Foundation and income generated by instrumentation use fees, Sandholdt property rental and Del Monte wharf rental*

In addition to funding from the CSU, SJSU, and SJSURF, MLML relies on funding from private donors, corporate sponsors, and endowments that help fund scholarships for MLML students, facility improvements, and MLML outreach activities such as seminars, tours and displays for our Visitor Center. The Friends of Moss Landing Marine Labs (FoMLML) supports MLML development and outreach activities, with the funds being administered by the Tower Foundation at SJSU. In AY15-16, MLML received several large donations to support the 50<sup>th</sup> Anniversary celebration, the Library Upgrade, new scholarships were introduced from the Loury family and the Simpkins family made a generous donation to support the development of the proposed center for Aquaculture



### *San José State University – Operating Budget*

The following table depicts the FY15-16 operating budget for MLML from SJSU, administered through the College of Science. The current \$3.4 million in State funding is derived from two sources; one via the CSU system-level support currently at \$1.6 million, and the second source from the administrative campus of SJSU that is \$1.8 million. MLML, like all the CSU campuses, had its OE&E support decreased in recent years, and continues to operate at 33% less than the OE&E appropriated in FY2007/08. The last substantive increase in OE&E was in 2002. From 1966 to 1993, MLML was completely supported by funds from the CSU thus funding the consortium model with SJSU as the administrative campus. Since 1994, all faculty members at MLML with appointments at non-SJSU campuses have been transferred to SJSU, so that now all MLML faculty members have assignments with SJSU. This and other financial changes have created the split State funding model (i.e. CSU and SJSU) for MLML.

<b>MLML Operating Budgets 2013-2016: SJSU</b>				
	<i>AY 13/14</i>	<i>AY 14/15</i>	<i>AY 15/16</i>	<i>AY 16/17</i>
Salary	1,664,862	1,745,802	1,661,377	1,811,042
Benefits	709,078	780,317	790,783	770,000
OE&E	389,627	452,096	407,648	407,648
Utilities	283,771	204,310	248,463	248,463
Salary Recovery / Reimbursement	130,531	227,485	13,022	20,000
Visiting Scientist Support	0	21,429	21,425	21,425
Other Reimbursement/Support	83,531	8,785	3,874	5,000
CSUMB Contribution	50,000	50,000	50,000	50,000
Prior Year Balance Forward	107,842	18,136	216,043	166,917
Roll-Forward Encumbrances	27,515	86,081	140,436	TBD
<b>TOTALS:</b>	<b>3,446,757</b>	<b>3,594,440</b>	<b>3,553,071</b>	<b>3,500,495</b>

For AY 15-16, the overall SJSU budget was slightly increased due to General Salary increases. The State budget covers the costs associated with salaries for faculty and staff, diving, instructional supplies, IT, library services, and facilities. MLML also remodeled a classroom which features moveable furniture, a 72" monitor on the wall, and short throw projectors; all well suited to both teaching and conferencing.

## San José State University – Research Foundation

The following table depicts the operating budget supporting research at MLML. Income is generated from the return of some F&A allocations generated by research grant activity, rental property operated by MLML, and administrative support by SJSURF.

MLML SJSURF OPERATING BUDGETS 2013-2016				
REVENUE	AY 13-14	AY 14-15	AY15-16	AY16-17 est
Other Income	23,403	20,000	417.34	750
Rental Income (Del Mar, Sandholdt Center)	121,424	120,852	123,538	111,925
F&A Return (Less 30% to PI's, Reserve, Deficit Refinance)	321,950	471,202	376,809	264,462
Foundation Admin and Facility Support	188,084	196,416	189,011	190,000
<b>Balance of Revenue To Fund Operations:</b>	<b>654,861</b>	<b>808,470</b>	<b>692,764</b>	<b>567,137</b>
OPERATIONS DETAIL				
Total Salaries, Wages and Benefits	429,815	409,768	420,613	429,369
<i>SJSURF Facility and Admin Staff - not from Grant Direct Costs</i>				
Total Administrative Costs	22,320	37,074	22,812	25,000
Total Diving Costs	0	1,865	2,500	5,000
Total Information Technology	29,600	1,360	18,558	53,400
Total Maintenance and Repairs to SJSURF Properties:		32,384	50,774	53,000
<i>Del Mar, Norte, Aquaculture Center, Firehouse, Sandholdt</i>				
Total Services & Facility Costs	86,639	29,200	67,557	72,000
Total Supplies & Equipment	20,860	53,903	10,309	11,500
Small Boat Support	15,000	15,000	15,000	15,000
<b>Total Operating Costs:</b>	<b>604,234</b>	<b>580,554</b>	<b>608,123</b>	<b>664,269</b>
				<b>(97,132)</b>
RESERVE	AY13-14	AY14-15	AY15-16	AY16-17 est
Reserve Account Balance By Year:	379,852	406,423	333,988	381,225
REFINANCING ACCOUNT				
Refinance Begin Balance	3,158,966	3,112,973	3,030,238	2,983,001

The research activity at MLML (including salaries for staff, equipment, IT, and maintenance) is largely supported from a portion of indirect costs in grants and contracts that are returned to MLML from the SJSURF (ave \$585,071/yr for past 13 years) and an administrative allotment (\$190,000/yr). These two sources of revenue total an average of \$775,071 annually that are required by MLML for research operations. This is made in part possible because the SJSU College of Science forgoes any F&A payments, enabling more of the F&A resources to be used by MLML.

SJSURF issued MLML an unplanned increase during FY15-16 as a result of cost savings in operations at SJSURF. MLML was originally planned to receive ~\$150,000. In July 2016, the SJSURF announced MLML would receive an additional \$180,000. Because MLML forecasted an extremely low F&A return for FY16-17, these funds were pushed to the following FY16-17 when the operating budget was showing a deficit of ~\$150,000.

MLML continues to struggle with variability in annual returns of F&A that are somewhat dependent on the F&A generated on SJSU campus. The uncertainty each year of the amount of F&A that will be returned to MLML has necessitated the build-up of a substantial reserve to cover MLML during years when less F&A is returned. These returned F&A funds pay the salaries for IT staff, financial analysts, maintenance staff, services, and maintenance of properties that all support MLML's \$15-\$20 million annual research activity.

## Property

In addition to the MLML/CSU facilities and land, the SJSURF holds title to six nearby properties that house Research Affiliates and funded programs. These properties are important entities to the current and future operations of MLML.

- One property is the 2.3-acre Shorelab that was purchased in 1965 and contains the pump house that delivers seawater to all classrooms and laboratories in the main lab and to MBARI. The new Aquaculture facility also occupies this site.
- The property housing Small Boats and Diving Operations (0.6 acres) was purchased in 1983. All 13 research vessels, maintenance shop, offices, and supplies for marine operations are at this location. Dive operations also are located here including compressors, dive cylinders, lockers, shower, office, and maintenance space supporting the dive program.
- Across the street from Marine Operations is the Norte Facility that is a 1.7-acre site purchased in 2000. This site houses mostly Research Faculty and Affiliates with offices and laboratories that generate about \$10 - 12 million in funding annually.
- The 9.2-acre Sandholdt property adjacent to the main MLML building was purchased in 2005, for the purposes of building housing and teaching/research space.
- The 1.6-acre Del Mar property was purchased in 2006 to provide dock space for the 135' R/V Point Sur. The vessel was sold in 2015, so we are discussing the long-range use of this site for a new vessel and additional research space.

Without some of these properties that provide seawater and vessel/dive support we could not function as a marine lab. The other properties are providing valuable income and research opportunities for our students or future space for housing that is desperately needed for future courses and involvement with consortium campuses.

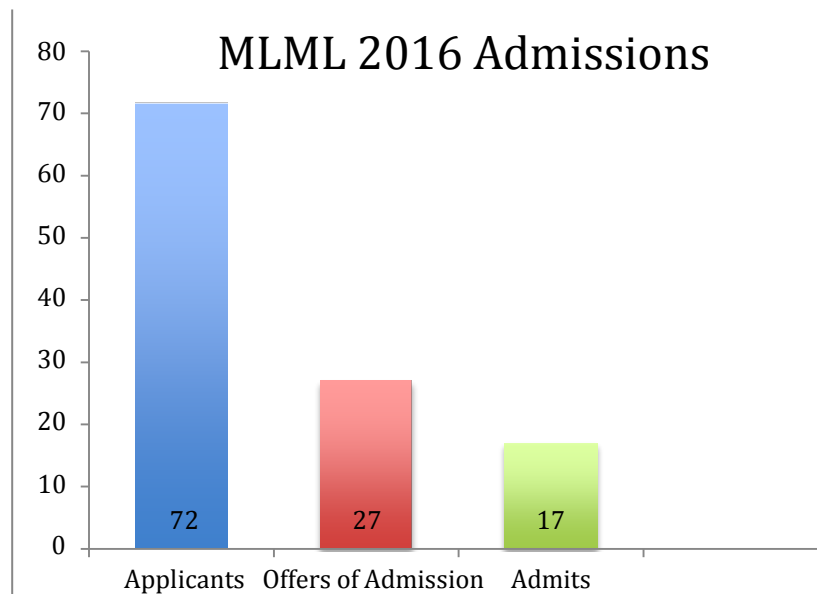


*State-owned Main Lab and five other properties administered by MLML (with title held by SJSURF).*

# Academics

MLML provides a world-class Master's program in marine science. Although MLML has a full complement of undergraduate and graduate courses, the majority (87%) of the students attending MLML are graduate students in pursuit of their M.S. degree in marine science. The combination of broad-based courses, excellent facilities support, and heightened expectations have garnered MLML a reputation as one of the best Master's program in marine science in the U.S.

## Admissions



The figure above indicates the number of graduate student applicants to MLML in AY15-16, the number of students offered entrance to the program, and the numbers that actually accepted the offer and were admitted.

The difference between the numbers offered and admitted is because MLML competes with R-1 institutions that provide healthy stipends for incoming students, thus some students choose to matriculate where there is better funding.



*MLML New Student Orientation 2016*

## *Enrollment (depicts actual Headcount)*

AY15-16 Enrollment (Headcount)			
CSU Campus	Undergraduates	Graduate Students	Total Enrolled
East Bay	0	0	0
Fresno	0	0	0
Monterey	3	41	44
Sacramento	0	0	0
San Francisco	0	3	3
San José	7	30	37
Stanislaus	0	0	0
<b>Totals:</b>	<b>10</b>	<b>71</b>	<b>81</b>

**Number of Masters in Marine Science degrees awarded: 12**

## *SJSU Annual Program Assessment*

This year's Annual Program Assessment efforts focused on Program Learning Outcome (PLO) 1 (1a & 1b).

**PLO 1a:** Demonstrate an understanding of fundamental concepts in a particular category of oceanography and marine science

**PLO 1b:** Be able to synthesize and integrate across all of these fields, yet achieve a depth of understanding in the student's individual specialty or field of study (MLML specialties include Physical Oceanography, Biological Oceanography, Chemical Oceanography, Geological Oceanography, Marine Phycology, Marine Ichthyology, Marine Turtle, Bird and Mammal Ecology, and Marine Invertebrate Zoology.)

We tracked enrollment numbers in the courses that assess PLO 1a and 1b and were offered during academic year 2015–16, and the pass/fail rate of those courses, in order to evaluate if enrolled students gained proficiency as described in the PLOs. We also tracked student success in the written thesis and oral defense during the academic year 2015/16, because PLO 1a and 1b also address skills that would be mastered at the culmination of the degree program. Analysis indicated a 100% pass rate of the courses in question, indicating sufficient mastery of the curricula that maps to PLO 1a and 1b, and a 100% success rate in the written thesis and oral defense, indicating that all students demonstrated an understanding of fundamental concepts in a particular category of oceanography and marine science (PLO 1a), the ability to synthesize and integrate across all of these fields, and achieve a depth of understanding in the student's individual specialty or field (PLO 1b).

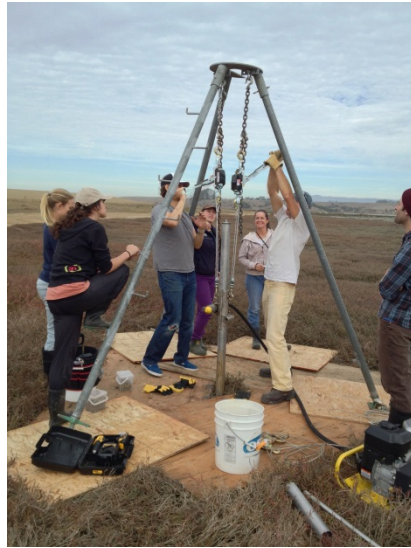


*MLML students from the Invertebrate Zoology Lab sampling in the Elkhorn Slough*



## *Program Improvements*

MLML leadership continues to look for ways to improve the academic program and curriculum, including the introduction of a new Aquaculture degree or certificate and a mandatory two-course first year blended course. In the near-term, the following two concepts are being evaluated.



*Students constructing artificial kelp forest      Geological Oceanography field studies*

### **Blended Class Concept**

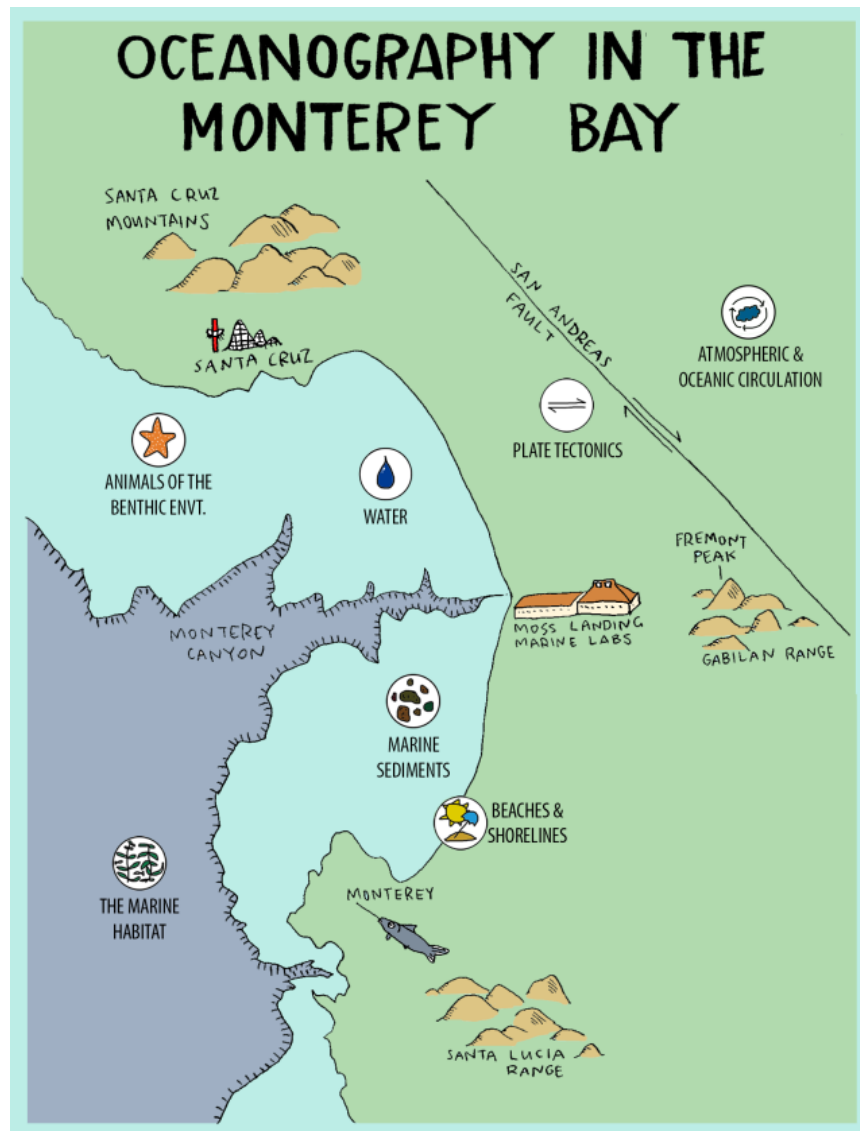
The “blended” class concept is being considered by the MLML faculty. This core course would be two semesters long and give all new students a basic understanding of marine science; incorporating physical, chemical, biological and geological oceanography, along with all the biological disciplines (Invertebrate, Vertebrate, Phycology/Ecology, Ichthyology) into a concept-driven course. The new students would concurrently take data analysis, statistics, programming, and science writing classes the first year. By the end of their first year, they also would write their thesis proposal.



## Distance Learning Course

Faculty at MLML, under the supervision of Chair Aiello are developing a hybrid, online and 'in person' class called "Oceanography in the Monterey Bay". The main goal of this course is to provide exposure to the features, processes, and many issues affecting the global oceans and our local environment with specific examples from the Monterey Bay and central California. Although the delivery format will be mostly online, it will also include in-person meetings and a field trip to the Moss Landing Marine Labs. Our faculty members are developing the content for several of the modules.

This class will acquaint students with the knowledge and skills necessary to satisfy the General Education (GE) graduation portion requirements for non-science majors. A first detailed syllabus has been created that defines 11 main topics/modules that cover all physical, chemical, and biological components of the ocean system. The syllabus was shared with the MLML Governing Board during the Spring 2016 meeting.



*Example of GE course map of major teaching modules*



# Faculty

## *Definitions*

The term **Regular Faculty**, as used in the MML Rules of Operation 3.1, refers to tenure/tenure-track faculty members as defined by the CFA bargaining agreement. **Research Faculty** refers to those persons who have demonstrated a commitment to the education and research goals of MLML. Further, Research Faculty are those researchers who are in residence at MLML, hold a Ph.D. degree, serve as Principal Investigators (PIs) on grants and can be appointed as lecturers, and are permitted to serve on student thesis committees.

The term **Research Affiliates** refers to researchers that are generally in residence at MLML, generally hold a Ph.D. or a M.S. degree, most can serve as PIs on grants, but typically do not mentor students or teach courses. Research Affiliates can serve on thesis committees if they have a Ph.D. degree.

There are nine tenure-track faculty members, ten research faculty members, and twelve Research Affiliates that serve as the primary educational and research staff at MLML. All RTP processes are conducted through SJSU. MLML is designated as an Equivalent Unit to a Department, thus a waiver was required for MLML to obtain a Chair. The Chair (Dr. Ivano Aiello) attends the SJSU College of Science Council of Chairs meetings and is responsible for the academic program at MLML (e.g. courses taught, faculty assignments, TA positions, instructional support).

## *Evaluation*

The MLML faculty members are evaluated by the RTP Committee at MLML, the Chair of MLML, the RTP Committee of the SJSU College of Science, Dean of College of Science, University RTP Committee, and finally the Provost of SJSU. Although there are a few standing committees (e.g. RTP, Curriculum, Diving Control Board, and Boats) most of the decision-making regarding policies, hires, planning, etc. is conducted in meetings of the entire faculty and a representative from the Research Faculty/Affiliates and a representative from the students.

## *Accomplishments*

MLML faculty, faculty researchers, and research affiliates acquired **90 grants and awards totaling \$16.7 million** during AY15-16. These funds are administered by the San José State University Research Foundation (SJSURF). Please see Appendix 1 for details on the grants awarded. Please see Appendix 2 for the extensive list of this year's faculty publications.

## **DIRECTOR**

### **JIM HARVEY, Director**

- Dr. Harvey serves on numerous Federal, State, and local committees: COAST – Executive Committee, CA Sea Grant – Advisory Board, NOAA – Pacific Scientific Review Group, NOAA – Pacific Cetacean Take Reduction Team, Humboldt State University Marine Lab – Advisory Board, Elkhorn Slough National Estuarine Research Reserve – Reserve Advisory Panel, The Marine Mammal Center – Scientific Advisory, San José State University Research Foundation – Board of Directors.
- Conducted research on harbor seal distribution and foraging, leatherback turtle foraging ecology, humpback and blue whale diving and foraging.
- Current and Pending Grants: \$11,586,496

## *FACULTY (9)*

### **IVANO AIELLO, Professor of Geological Oceanography**

- Selected to sail as shipboard scientist on the Integrated Ocean Discovery Expedition 363 "West Pacific Warm Pool": Singapore to Guam (10-4 to 12-4, 2016);
- Christina Ravelo and Dr. Aiello convened a session at the AGU meeting in SF (Fall 2015) on: Interplay between tectonics, oceanography, hydro-thermal circulation and microbial processes in the Gulf of California.
- Pete Raimondi and Dr. Aiello convened a session at the Ocean Sciences meeting in New Orleans: Exploring biological-geological interactions in coastal and nearshore habitats.
- Dr. Aiello organized a workshop in Puerto Vallarta Mexico (11/6 to 11/9) Exploring deep subsurface life, sedimentation and tectonics in a young ocean: Workshop to synthesize site survey cruise data and develop new strategies for a scientific ocean drilling proposal in the Guaymas Basin. For this Dr. Aiello obtained a grant from IODP - USIO (\$22,100, 9/15 to 9/16).
- Current and Pending Grants: \$85,302

### **KENNETH COALE, Professor of Chemical Oceanography**

- Dr. Coale Presented at the American Geophysical Union and at the American Chemical Society
- Courses taught: Chemical Oceanography, Biogeochemical Cycling of Trace metals and nutrients in the Coastal Zone, Marine Instrumentation and Fabrication
- Current and Pending Grants: \$189,683

### **TOM CONNOLLY, Professor of Physical Oceanography**

- Dr. Connolly is the lead Principle Investigator for NSF-funded project on wave-current interaction, and MLML subcontract for NOAA-funded Central and Northern California Ocean Observing System (with MBARI and other institutions).
- Dr. Connolly presented research at two international conferences, American Geophysical Union Fall Meeting in San Francisco and American Geophysical Union/Association for the Society of Limnology and Oceanography Ocean Sciences Meeting in New Orleans.
- He is also a mentor for Monterey Bay Research Experiences for Undergraduates program (Miranda Baker, Haverford College).
- Current and Pending Grants: \$125,628

### **JON GELLER, Professor of Invertebrate Zoology**

- 370 marine species discovered on beached debris from the 2011 Tohoku tsunami
- DNA barcoding research presented at the International Marine Bioinvasions Conference, Sydney, Australia
- Invasion research and training of Ecuadorian scientists in the Galapagos Islands
- MLML graduate students participate in biodiversity genetic research in the Northern Hawaiian Islands and Indonesia
- Current and Pending Grants: \$1,947,715 and \$378,632

### **MICHAEL GRAHAM, Professor of Marine Ecology**

- Workshop on developing a CSU (proposed) Center For Aquaculture

- Processing center for study of effects of Fukushima disaster on radiation levels in seaweed
- Re-elected to 5-year contract as editor and managing office for Journal of Phycology
- Current and Pending Grants: \$507,230



*MLML's (proposed) Center For Aquaculture and Dr. Graham featured in Silicon Valley Business Journal Sept 2016*

## SCOTT HAMILTON, Professor of Ichthyology

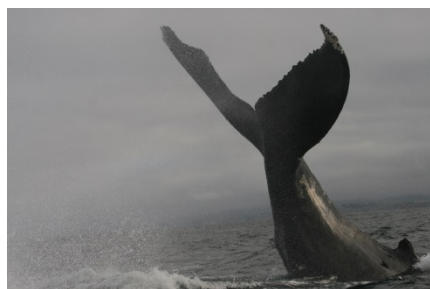
- Continuing studies investigating the effects of climate change (ocean acidification and hypoxia) on various aspects of the ecology and physiology of rockfish. Work includes studies of the impacts of multiple stressors on behavior, physiology, and gene expression in juvenile rockfish and effects on reproduction, embryo development, and larval quality in rockfish and other groundfishes. Funding from NSF, CA Sea Grant, NOAA, and SJSU has supported this work. The collaborative research involves students and faculty from MLML, CSU Monterey Bay, UC Santa Cruz, and NOAA Fisheries.
- Dr. Hamilton initiated two projects, both funded by programs at NOAA, to study life history and demographic variation in important groundfish species (lingcod and canary rockfish) and to provide the necessary data to help improve the stock assessments and ultimately the fisheries management of both species. The collaborative research involves students from MLML and CSU Monterey Bay and colleagues from NOAA Fisheries.
- Current and Pending Grants: \$1,357,654

## KATIE LAGE, Librarian

- Kathryn (Katie) Lage joined the MLML faculty as the new Librarian on July 1, 2016. She comes to MLML from the University of Colorado Boulder, where she was head of an interdisciplinary, specialized library supporting research and teaching in the earth and environmental sciences. Lage is happy to be back in the CSU system after receiving her Master of Library Science from San José State University in 2002.
- Research interests: the challenges and opportunities that digital geospatial library materials present for organization and retrieval. Current research focuses on the curation of research data in geohumanities scholarship and in the Sciences.
- Presented on this research at the Association of American Geographers (AAG) in Chicago.

### **GITTE MCDONALD, Professor of Vertebrate Ecology**

- Dr. McDonald and her collaborators from Aarhus University, St. Andrews University, and University of La Laguna have been awarded an Office of Naval Research grant to study heart rate in deep diving cetaceans.
- Alison Stimpert, Gitte McDonald, and colleagues from Marine Mammal Commission and the University of St. Andrews co-organized a workshop on Career/Life Balance in Marine Mammal Science held in conjunction with the Marine Mammal Society Biennial conference in December.
- Current and Pending Grants: \$55,599 and \$118,081



### **NICK WELSCHMEYER, Professor of Biological Oceanography**

- Nick Welschmeyer, Award of merit, distinguished faculty mentor for Brian Maurer in CSU Student Research Competition, 2013.

#### *Dr. Welschmeyer's Students:*

- Karen Parker, M.S., Molecular Consultant, (Co-Founder, Chrysopylae, Inc.), Los Altos, CA. (MLML Thesis: 1st place, Outstanding Master's Thesis Award, Science and Engineering, San Jose State University, 2014).
- Brian Maurer, M.S., Water Systems Specialist, Monterey Bay Aquarium, Monterey, CA. MLML Thesis: 1st place CSU-wide competition for best graduate research in biological sciences, 2013.
- Current and Pending Grants: \$785,100 and \$440,000

*Dr. Welschmeyer and students onboard Cal Maritime Academy's Training ship Golden Bear*



### **EMERITUS FACULTY (2)**

#### **GREG CAILLIET – Professor Emeritus, Ichthyology, Moss Landing Marine Laboratories (MLML);**

- Co-Director, Pacific Shark Research Center (PSRC); & Associate Director, Friends of Moss Landing Marine Laboratories (FoMLML)
- Dr. Cailliet is revising his part of the book *Fishes: A Laboratory and Field Guide through Waveland Press*, that he first co-authored in 1985, with Milton Love, Lara Ferry, and Scott Hamilton.
- He gave two keynote addresses in 2015 at the Symposium on Elasmobranchs for the Fishery Society of the British Isles in Plymouth, England; and the Symposium on fish feeding habits (“Gutshops”) at the American Fisheries Society meetings in Portland Oregon. Both keynote addresses resulted in manuscripts for publication.

**MIKE FOSTER – Professor Emeritus, Phycology**

- Dr. Foster published his co-authored book, *The Biology and Ecology of Giant Kelp Forests* with University of California Press. The book received a PROSE Award from the Association of American Publishers, and excellent reviews in a number of journals, including Ecology.
- Dr. Foster also has a consulting contract with NOAA/CFW to assist with damage assessment related to the Refugio Oil Spill. In addition, he has consulting contract with the Central Coast Regional Water Quality Control Board to help assess the thermal impacts of the Diablo Canyon Nuclear Power Plant.

**RESEARCH FACULTY (10)****LARRY BREAKER, Oceanography**

- Dr. Larry Breaker was invited to give a seminar at Scripps on his experience with 30 years of data from the Shore Stations Program in October 2016. Dr. Larry Breaker was invited to give a seminar at Scripps on his experience with 30 years of data from the Shore Stations Program in October 2016.
- Dr. Breaker also published a paper in La Tecnica sponsored by the University of Manabi Province on sea surface temperature variability off the coast of Ecuador in December 2015 (first author), and (3), published a paper entitled “Trends in sea surface temperature off the coast of Ecuador from 1900 to 2015” in the Journal of Marine Systems in September 2016 (first author).

**COLLEEN DURKIN, Biological Oceanography**

- Field work: Field work collecting sinking marine particles and phytoplankton: two, 5-day cruise at the New England Shelf Break (collaboration with scientists at University of Rhode Island and Skidmore College) and two day-cruises in Monterey Bay (collaboration with scientists at MBARI). Analysis of samples is ongoing at MLML.
- Communication, Publication, Education: Publication of 3 first-author studies, submission of two second-author manuscripts. Three research proposals, and two pre-proposals, were written and submitted by P.I. Durkin (NSF, NASA, CA-SeaGrant). P.I. Durkin also gave two invited seminars (at MBARI and MLML) and delivered two guest lectures to MLML graduate students (Data Analysis and Biological Oceanography). Mentored CSUMB-REU undergraduate student, who designed and performed an independent research project in the Durkin lab.
- Service: Invited participation and contribution to NSF sponsored “Biology of the Biological Pump” workshop to identify priorities for future research supported by NSF-OCE division. Nominated and appointed as committee member of the Association for the Sciences of Limnology and Oceanography (ASLO) Online Media Library.

**DAVID EBERT, Pacific Shark Research Center**

- A total of 13 books published or currently *in press*.
- A total of 49 publications, with PSRC students authoring 28 publications.
- PSRC students attended 9 conferences and presented 35 papers.

## **STACY KIM, Benthic Ecology**

Graduate students (2):

- Clint Collins completed his MS Thesis, Natural and Anthropogenic Disturbance in McMurdo Sound, Antarctica: Iceberg Scours, Human-Derived Pollutants, and their Effects on Benthic Communities. Clint is now employed as the Diving Safety and Logistics Officer at University of Hawaii.
- Laughlin Barker started in a Ph.D. program in Underwater Robotics and Engineering at Johns Hopkins University.
- Current and Pending Grants: \$662,530



## **VALERIE LOEB – Biological Oceanographer**

- October-November 2015 conducted the third and final field effort in an NSF funded pilot study that adds net sampling and underwater video recording to supply transits of the U.S. Antarctic Program vessel, ARSV “L.M. Gould” to establish the identity, concentrations and biomass of zooplankton and nekton acoustics targets recorded by coincidental Acoustic Doppler Current Profiling (ADCP) and relate these to physical structuring imposed by the strong frontal jets of the Antarctic Circumpolar Current (ACC)
- May 2016 prepared and submitted a grant proposal to NSF Polar Programs entitled “Drake Passage- Antarctic Peninsula Ecosystem Research (DAPPER)” requesting 3 years of support to continue the research initiated during the Drake Passage Pilot Study
- Current and Pending Grants: \$171,991

## **ILIANA RUIZ-COOLEY, Evolutionary Ecology, Marine Mammals and Turtles**

- NSF, Biological Oceanography. The effect of warming on elemental cycling and tropho-dynamics in the Eastern Tropical Pacific. PI. R. I. Ruiz-Cooley, Submitted, 08/2016
- IMS Packard OST Endowment Proposal. *Domoic acid in marine food webs: a novel approach to trace nitrogen sources and transfer*. PI: Clarissa Anderson, Co-PI (Ruiz-Cooley); \$ 20,000; 2016
- NSF, Chemical Oceanography. Domoic acid in marine food webs: a novel approach to trace nitrogen sources and transfer. PI: Ruiz-Cooley, Co-PIs: C. Anderson, and R. Kudela
- Current and Pending Grants: \$390,374

## **JASON SMITH, Environmental Biotechnology**

- Awarded grant from Gordon and Betty Moore Foundation to develop technologies for genetic transformation tools for the toxic diatoms *Pseudo-nitzschia australis* and *P. multiseriata* (10/15)
- April Woods completed her masters’ thesis describing the association of photooxidative stress tolerance in the production of domoic acid by diatoms in the genus *Pseudo-nitzschia* (5/16)
- The national Alliance for Coastal Technologies program, with MLML-EBL serving as the Pacific Coast partner and testing laboratory was funded for an additional five years by NOAA-NCCOS-IOOS. ACT is one of the longest lived (15 yrs) extramurally funded programs by NOAA



- Current and Pending Grants: \$1,382,400 and \$97,271

#### **RICK STARR, Fisheries and Conservation Biology**

- Finished 10th year of Marine Protected Area monitoring with volunteer anglers. We published the first information showing that MPAs in central California work to increase densities and sizes of fishes, relative to adjacent reference sites
- Worked with National Marine Fisheries and Ca Dept. Fish and Game scientists to evaluate the effects of a 10-year long fishery closure.
- Developed a stereo-video camera system to survey commercially important fishes in deep rocky habitats
- Current and Pending Grants: \$420,773



#### **DIANA STELLER, Phycology**

- Mentored graduate student Angela Zepp who recently was awarded the 6,000\$ NOGI / Zale Parry diving scholarship for her research on demography and pH variation in the acid weed *Desmarestia ligulata* and her research diving leadership.
- Taught field based research diving and techniques courses. These included teaching Marine Science Diving (August and Fall semester 2015) and co-teaching Marine Environmental Studies of the Gulf of California (Spring 2016).
- Conducting international collaborative research on understanding the foraging ecology of the endangered Hawksbill sea turtles (*Eretmochelys imbricata*) in Mexico.

#### **ALISON STIMPERT, Vertebrate Ecology**

- In collaboration with NOAA, measuring the effects of anthropogenic sound on rockfish in southern California.
- In collaboration with MBARI, recording the soundscape of Monterey Bay from a bottom-mounted, cabled hydrophone.
- Developing methods for quantifying response of calling baleen whales to Navy sonar.
- Current and Pending Grants: \$94,969



## **RESEARCH AFFILIATES (12)**

### **SCOTT BENSON – Southwest Fisheries Science Center - Marine Turtle Research Program (SWFSC)**

- Received funding for a 2-year study to assess leatherback turtles off the U.S. West Coast in a changing climate.
- Active Level IV responder for the NOAA Whale Entanglement team to rescue whales tangled in fishing nets and line on the Central coast of CA.



### **JOSEPH BIZARRO – Ichthyologist**

- Postdoctoral fellow with the National Marine Fisheries in Santa Cruz, CA
- Continuing his research in Aquatic and Fisheries Science and is a consultant on essential fish habitats
- Worked as a GIS Analyst, research ecologist and staff scientist for the Pacific Shark Research Center and Center for Habitat Studies at MLML.

### **ROSS CLARK – Central Coast Wetlands Group (CCWG)**

- Led the 2016 EPA National Wetland Assessment effort for California
- Initiated a comprehensive Moro Cojo Slough planning, monitoring and modeling effort.
- Led a Monterey and Santa Cruz County Coastal Climate Change Hazard assessment effort
- Current and Pending Grants: \$1,828,141 and \$858,673

### **CURT COLLINS – Climate Change, Remote Sensing and Oceanography**

- Emeritus Professor at CSUMB, Department of Oceanography and at the naval Postgraduate School
- Continues his research using remote sensing devices to understand the effects of climate change
- Began collaboration with the Physical Oceanography Lab and Dr. Connolly to submit proposal to NSF

### **RUSTY FAIREY – Marine Pollution Studies Lab (MPSL)**

- Implementation of a long term monitoring program for mercury in the San Francisco Bay Delta.
- Managing and evaluating environmental data collected in response to the BP oil spill on the Gulf Coast
- Led the CA field survey for EPA's 2015 National Coastal Condition Assessment
- Led the field survey for a new monitoring program along the bay margins for the SF Bay Regional Monitoring Program
- Current and Pending Grants: \$2,947,715

### **WES HEIM – Marine Pollution Studies Lab (MPSL)**

- Implementation of a long term monitoring program for mercury in the San Francisco Bay Delta.
- Development of a working mercury model of the San Francisco Bay Delta and Yolo Bypass.
- Completion of a 4-year project focused on management practices to minimize production and export of organic mercury from agricultural and non-agricultural lands.
- Current and Pending Grants: \$5,594,481 and \$16,923

### **KIM NULL – Chemical Oceanography**

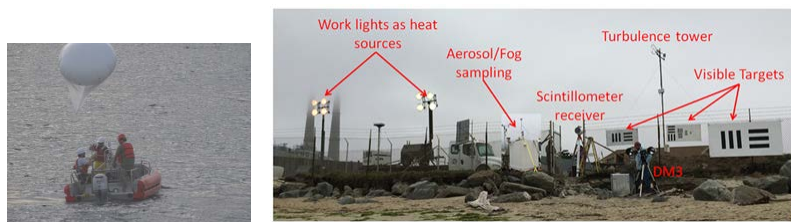
- Received funding from Anthropocene Institute to purchase water quality monitoring equipment to monitor the Moro Cojo slough.
- Mentor for the Research Experience for Undergraduates (REU), summer 2016.
- Participation in the nutrient co-operative advisory committee for central California.
- Current and Pending Grants: \$756,264 pending

### **TIM STANTON – Naval Postgraduate School, Research Professor, Oceanography Department**

- Completion of a 4 year project focused on management practices to minimize production and export of organic mercury from agricultural and non-agricultural lands.
- Dr. Stanton has maintained a NSF and ONR sponsored Ocean Turbulence research group at NPS for the last 30+ years, with annual funding between \$500K and \$1M / year for the last two decades. At MLML, he has a \$100K ONR proposal being routed through the system for the Stratified Arctic Oceans DRI for FY17.
- Developing plans to participate in student projects with Dr. Tom Connelly and other MLML colleagues during 2017. Research will focus on instrument development, data analysis and ocean waves and turbulence.

### **QING WANG – Naval Postgraduate School**

- Lead and participated in three field campaigns for air-sea interaction measurements, including the Coupled air-Sea Processes and EM ducting Research (CASPER), Coastal EO PropagaTion eXperiment (CEOPTeX), and Coastal Land-air-Sea Interaction (CLASI) projects;
- Lead a team of students, postdocs, and engineers on extensive data analyses of model and observational data;
- Organized special issues in conferences and workshops



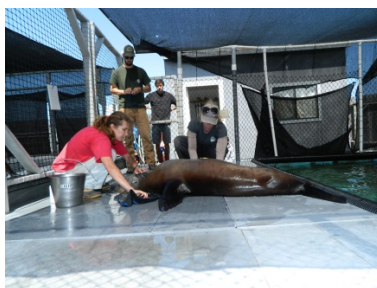
### **MARK YARBROUGH – Marine Optical Buoy Project (MOBY)**

- Continued MOBY operations at the Lanai, Hawaii morning site, providing calibration/validation data in support of Ocean Color science.
- Delivery of two new Carbon Fiber buoy structures for the MOBYNet project.
- Continued production of four fiber optic spectroradiometers for MOBYNet and production of two MOBYNet power and data acquisition control systems
- Current and Pending Grants: \$12,399,007

### **JENIFER ZELIGS – Science and Learning With the Help of Sea Lions (SLEWTHS)**

- Built a new deck and pool for El Nino sea lion pups that we adopted who were deemed unreleasable after repeated restrandings and health issues. This is part of a larger problem of unusual massive stranding events in California that SLEWTHS is contributing expertise in the handling of the event.

- Began an investigation into the calibration of accelerometer usage for determining foraging events in sea lions with Gitte McDonald, MLML faculty and another investigation with Westchester University into swimming mechanics.



# Student Accomplishments

## *Introduction*

In AY15-16, MLML had 81 students enrolled primarily from SJSU and CSUMB with several that came from SFSU. Seventy-one were graduate students and 10 were undergraduates. Twelve students graduated with an M.S. degree. Of those twelve, two have enrolled in Ph.D. programs, two are now employed by state and federal agencies, one is working for a non-governmental organization (NGO), and three are employed as staff at MLML.



*Phycology Lab students (L-R) Cody Dawson, Angela Zepp and Steven Perez-Cunningham working in the intertidal zone*



*Alumna Kirstin Carlson designed a 50<sup>th</sup> Anniversary Logo that illustrates MLML's spirit and global research activities*

## **AY 2015-2016 GRADUATES**

### **Hamilton "Will" Fennie**

"Early Life History Traits Influence the Effects of Ocean Acidification on the Behavior and Physiology of Juvenile Rockfishes in Central California"

**Faculty Advisor: Hamilton**

### **Sara Worden**

"Effects of Small-Scale Substrate Complexity and Heterogeneity on Rocky Intertidal Species Interactions"

**Faculty Advisor: Graham**

### **Kristin Meagher Robinson**

"Motile Cryptofaunal Invertebrate Assemblages in Catalina Island's Rhodolite Beds in Relation to Physical Structure and Live Rhodoliths"

**Faculty Advisor: Geller**

### **Gabi Navas**

"Geographic Variation in the Life History and Morphology of The Pacific Geoduck, *Panacea Generosa*"

**Faculty Advisor: Hamilton**



**Clint Collins**

"Natural and Anthropogenic Disturbance in McMurado Sound, Antarctica: Iceberg Scours, Human-Derived Pollutants, and their effects on Benthic Communities"

Faculty Advisor: Aiello and Kim

**Vera Lawson**

"Tracking Icebergs and Sea Ice in the Mid-Pleistocene Bering Sea Suggests Sea Ice Affects Ice Sheet Growth"

Faculty Advisor: Aiello

**Ryan Fields**

"Spatial and Temporal Variation in Rosy Rockfish (*Sebastes rosaceus*) Life History Traits"

Faculty Advisor: Hamilton

**Emily Donham**

"Effects of Global Change on Algal Biomineralization and Benthic Community Interactions on California's Temperate Rocky Reefs"

Faculty Advisor: Hamilton

**Stephen Loiacono**

"Effects of Substrate Warming on Sessile Marine Invertebrate Communities in Monterey Bay, California"

Faculty Advisor: Geller

**Melinda Tanner**

"A Sedimentological Analysis of the Siliciclastic Fraction in Pliocene Core Sediments from Bowers Ridge, Bering Sea (IODP EXP 323)"

Faculty Advisor: Aiello

**April Woods**

"Cellular Stress Physiology in the diatom *Pseudo-nitzschia* and its role in Domoic Acid production"

Faculty Advisor: Welschmeyer and Smith

**Pamela Neeb Wade**

"Effects of Non-Native Species on Two Life Stages of the Olympia oyster, *Ostrea lurida*, in the Elkhorn Slough Estuary"

Faculty Advisor: Geller





## Open House



MLML students continued their successful outreach activities by planning and hosting the MLML Annual Open House. Every year MLML students open MLML's doors and invite the public to come and explore the labs. The event is free and aimed at all ages. This long treasured event allows the community, families, and educators to visit MLML, interact with our students and researchers, tour the facilities, explore our labs and participate in interactive activities geared towards marine science and our local ecology. MLML's Student Body constructs invertebrate touch tank displays, holds a raffle to earn scholarship funds, presents a sea lion show, and performs a marine-themed puppet show, which has become legendary. Other activities include a bake sale to help fund student research, marine-themed arts and crafts, and tours of our research vessels. The 2015 Open House had more than 1,800 visitors and netted more than \$4,000 for the Student Body Scholarships.

The Student Body also sold homemade lunches during the 50<sup>th</sup> Anniversary weekend and raised \$2,000 for the MLML Student Body Treasury.

**Moss Landing Marine Laboratories**  
Come celebrate our 50th Anniversary!

**\*Open House\***  
Saturday & Sunday  
April 30 - May 1  
9:00 am - 5:00 pm



**FREE admission!**  
**FREE parking!**

**FUN!**

**FREE!**

- Live touch tanks
- Sea lion show
- Arts & Crafts
- Raffles & Prizes
- Marine life puppet show
- Educational presentations
- Meet staff, faculty & students
- Food available for purchase

8272 Moss Landing Rd, Moss Landing, CA  
For more information or disability accommodations  
Call 831.771.4400 or visit:  
[www.openhouse.mlml.calstate.edu](http://www.openhouse.mlml.calstate.edu)



## *Scholarships and Awards*

**AY 15-16**  
**25 Awards**  
**\$20,500**

**John H. Martin Scholarship**  
Heather Fulton-Bennett

**Xiphias Martin Scholarship**  
Maureen (Mo) Wise

**James Nybakken Scholarship**  
Pamela Neeb Wade

**Sonia Linnik Hamilton Marine Science Scholarship**  
Jen Chiu

**Signe Lundstrum Memorial Scholarship**  
Steven Perez-Cunningham

**Loury Family Marine Science Outreach Scholarship**  
Laurel Lam

**Simpkins Family Marine Science Scholarships**  
Stephanie Schneider  
Devona Yates  
Maureen (Mo) Wise  
Scott Miller

**MLML Scholar Awards**  
Stephen Pang  
Mason Cole

**MLML Wave Awards**  
June Shrestha  
Bonnie Brown  
Holly Chiswell  
Stephan Bitterwolf  
Jessica Jang  
Emily Schmeltzer  
Kristin Walovich

**Dr. Earl and Ethel M. Myers Oceanographic and Marine Biology Trust Grants**  
Stephan Bitterwolf  
Mason Cole  
Lindsay Cooper  
Cody Dawson  
Heather Fulton-Bennett  
Jinchen (Martin) Guo  
Jessica Jang  
Alex Olson  
Angela Zepp



## *Friends of MLML*



FRIENDS OF MOSS LANDING  
MARINE LABORATORIES

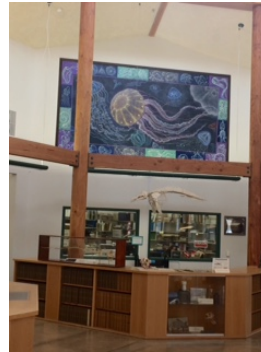
The Friends of Moss Landing Marine Laboratories (FoMLML) was established in 1994 as a 501c(3) non-profit organization to support research, education and conservation at MLML. Although the 501c(3) has been dissolved, the organization continues to provide support and organization for the MLML alumni and current students through donations and philanthropic giving. These funds are held and administered at the SJSU Tower Foundation. The FoMLML plays a critical role in gathering community support for the facility, funding scholarships for graduate student support, undertaking special projects to enhance the MLML Visitor Center, and operating numerous public outreach programs for the local community. In AY15-16, FoMLML received \$630,715 in private donations, endowments and corporate contributions from alumni, the Anthropocene Institute, the Simpkins family, and the Packard Foundation.



## *Library Upgrade*

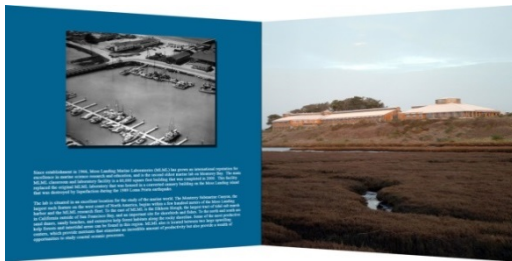
To raise funds for upgrading the MLML/MBARI Research Library, SJSU's Advancement team launched a crowdfunding campaign. The library's furniture had been donated by a local jail 35 years ago, and was shabby and broken. A short video was produced and then posted on SJSU's crowdfunding page. FoMLML

experienced a tremendous response from alumni and donors, and almost \$15,000 was raised to purchase new furniture and chairs. *(see photo on page 8.)*



### *50<sup>th</sup> Anniversary Book*

FoMLML also assisted the 50<sup>th</sup> Anniversary Planning Committee with fundraising efforts to raise money to publish a book commemorating 50 years of excellence in marine science research and education. Almost \$24,000 was raised with donations coming from the alumni, the Monterey Bay National Marine Sanctuary, the Acacia Foundation, the Moss Landing Harbor District, MBARI, and Save The Earth.

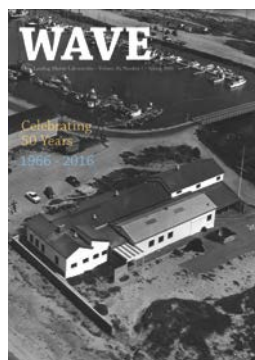


*Mock-up of the 50<sup>th</sup> Anniversary Book used to raise money towards publication*

### *Friends of MLML Outreach Activities*

#### **The Wave Magazine**


FoMLML produces the *Wave* magazine, which highlights MLML research activity and student success, and provides updates to sponsors and donors. The AY15-16 edition focused on MLML's 50<sup>th</sup> Anniversary.






## Public Lecture Series

A free public lecture was presented by one of our Oceanographic Technicians, Jason Adelaars about some of the lab's current research, *"Stand Back! We Are Doing Science!"*

 FRIENDS OF MOSS LANDING  
MARINE LABORATORIES

presents


 Community Lecture Series 2016


**STAND BACK! WE ARE DOING SCIENCE!**


The Friends of Moss Landing Marine Labs  
invites you to please join us:

Wednesday July 20, 2016  
**7:00pm**  
For an evening with  
**Jason Adelaars**

8272 Moss Landing Rd. Moss Landing, CA







Let's take a quick look at a few projects currently happening out of Moss Landing Marine Labs!! From removing nutrients out of agricultural run-off water, to identifying areas vulnerable to the impacts of sea level rise around Monterey Bay, to real-time oceanographic monitoring, and how we're using cutting-edge technology to achieve results.

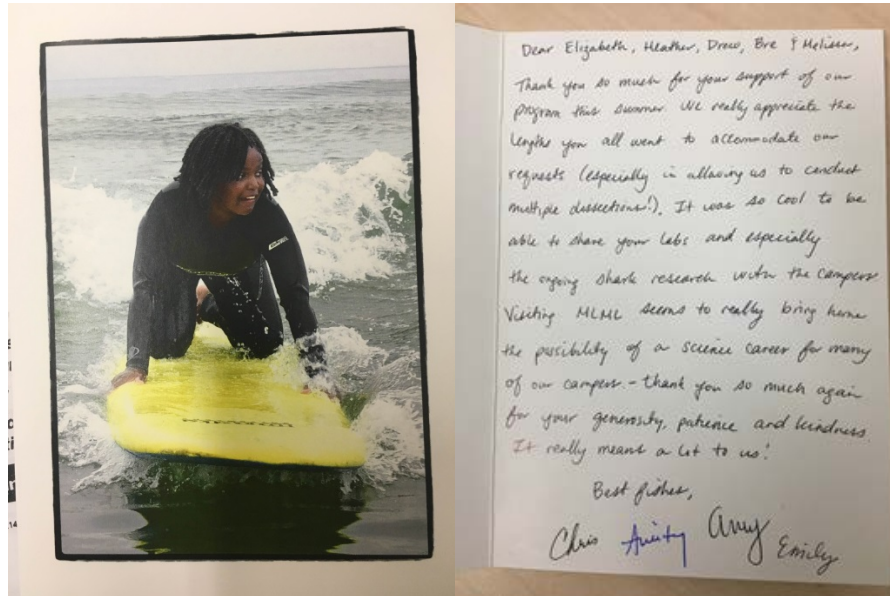
Recommended donation for non-Friends of MLML: **\$8**  
To check if you are a Friend of MLML:  
Please call: 831-771-4100 or Email: [friends@mlml.calstate.edu](mailto:friends@mlml.calstate.edu)

## Lab Tours

During AY 15-16, FoMLML student tour guides conducted more than 25 tours for local K-12 classes, science summer camps, home schoolers, and other youth organizations. Our tour guides provided education about the ecology of the local coast, wetlands, redwoods, and native plants found along the shore. Visitors get to walk through labs, participate in hands-on activities, hike along the slough, learn about the Monterey Bay Submarine Canyon, and learn what it takes to be a marine scientist!



*Dr. Diana Steller shows young visitor how to write underwater*

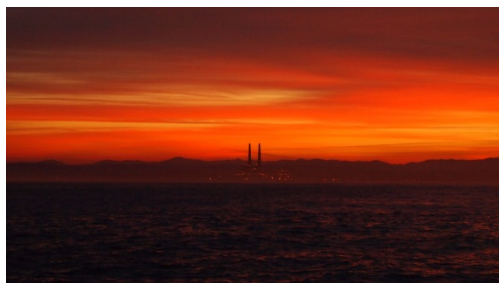


Camp SeaLab student's first visit to the ocean  
Moss Landing, CA July 2016

Thank You card from CampSea Lab for Tours given summer 2016

## Seminar Room

In addition to these outreach and fund raising activities, FoMLML coordinates the use of MLML's Seminar Room. MLML provides its Seminar Room free of charge to marine research organizations throughout the Monterey Bay area and California and allows other non-profit groups to use the space at a discounted rate. In AY15-16, FoMLML coordinated 48 events and meetings in the MLML Seminar Room for groups like CSUMB, PBS, the BBC, the Monterey Bay Aquarium, NOAA, CA Fish and Wildlife, US Dept. of Agriculture, CSU Stanislaus, Canada College, local NBC station KSBW, and for nonprofits like the American Red Cross, North Monterey County Fire District and local school districts. MLML even leant the Seminar Room, lobby and Martin's Point of View to York High School in Monterey, CA for its senior prom.





## 50<sup>th</sup> Anniversary

MLML held its first classes in 1966 at a converted cannery building that had been occupied by a private marine laboratory (Beaudette Foundation). Since 1966 MLML has grown into a major marine laboratory with an international reputation. More than 650 students have graduated with a Master's degree. More than \$400 million has been generated in contracts and grants during its history. To celebrate the 50<sup>th</sup> Anniversary of MLML a series of events was held, with the help of San José State University.



Moss Landing Marine Labs

- **4 August:** MLML hosted a media day for ten representatives from the local print and TV media, which produced four stories about MLML, including a cover story on the new MLML Aquaculture Facility in the *Silicon Valley Business Journal* on August 16. (see Appendix 3)
- **5 August:** An evening reception for more than 100 dignitaries overlooking Monterey Bay provided an opportunity for elected officials (Congressman Sam Farr and Assemblymen Mark Stone and Bill Monning), CSU Administrators (CSU Assistant Vice Chancellor for Research, Ganesh Raman, SJSU President Mary Papazian and CSU Monterey Bay President Eduardo Ochoa), leaders of local marine institutions (CEO of MBARI Chris Scholin), and California Secretary of Natural Resources John Laird to celebrate MLML's history. The festivities included the presentation of a Congressional Order of Honor of the 114<sup>th</sup> U.S. Congress by Congressman Farr, and a California State Assembly Resolution by Assemblyman Mark Stone.
- **6 and 7 August:** More than 450 former and current MLML students, staff, and faculty gathered for two days of pictures, reminiscing, and celebrations. More than half of the 650 MLML alumni attended, a truly amazing testimony to their connection with their alma mater.



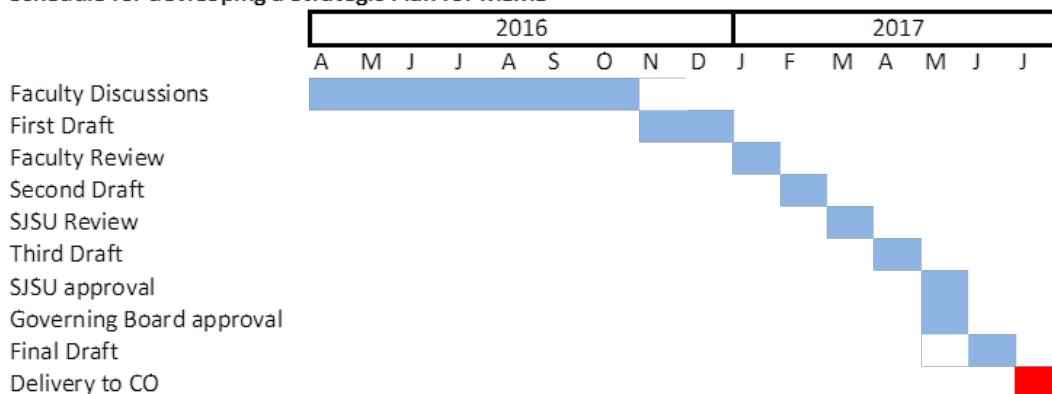
Alumni gather at the Martin's Point of View to take group photos during MLML's 50<sup>th</sup> Anniversary

# Looking Forward

## *Strategic Plan*

According to a letter dated 18 December 2015 from Assistant Vice Chancellor for Research, Zed Mason and Executive Vice Chancellor for Academic and Student Affairs, Loren Blanchard (CO), MLML was conditionally authorized to continue operations under EO 1103 until 6 May 2016 based on an original Annual Report and an addendum. The conditional status was based on the fact that there was no approved Strategic Plan for MLML. Given that an appropriate and comprehensive Strategic Plan could not be developed by 6 May 2016, MLML and SJSU requested a greater amount of time to develop such a plan. A letter dated 25 April 2016 to Dr. Sue Martin (interim SJSU President) from Loren Blanchard approved the request thus a Strategic Plan was to be developed and delivered to the CO by 31 July 2017. Below is our schedule for developing a Strategic Plan and securing the proper approval before it will be sent to the CO. We have had a few faculty meetings and one MLML faculty retreat to start the development of a strategic plan.

**Schedule for developing a Strategic Plan for MLML**



## *Academic Program*

The primary objectives of the MLML Academic Program are to decrease the time until graduation with a M.S., broaden the number and diversity of students in courses and receiving our content, and strengthen the student's understanding of ocean issues and their scientific capabilities. We have recently decreased the time until graduation using a combination of greater oversight and mentoring. Future plans are to make curricular changes that would reduce the course burdens and to develop curriculum that accelerates the thesis development process (e.g. proposal writing, improved writing skills, and better analytical skills).

The development of a GE-based hybrid course that would allow much greater participation by students within the consortium would greatly increase the number and diversity of the students we serve. Most of the students taking courses at MLML are graduate students in the M.S. marine science program. By offering hybrid (online/field) courses we expect undergraduates, in particular, will be attracted to the MLML curriculum. Because the consortium campuses have much greater numbers of under-represented groups in the sciences, we can attract a greater diversity of students into the program.

We have been trying recently to provide courses that are more integrated regarding the different disciplines of marine science. The applied nature of some course material, the multidisciplinary integration, and the broadening of content should strengthen the student's understanding of ocean issues and their ability to practice science.



## *Research*

Much of the success of MLML regarding research activity is because there are a number of affiliated researchers. In the effort to grow research capacity at MLML we continue to add soft-money researchers to the program. These personnel bring added expertise benefitting the students and faculty, and they bring in substantial amounts of research dollars (approximately \$9.4 million annually).

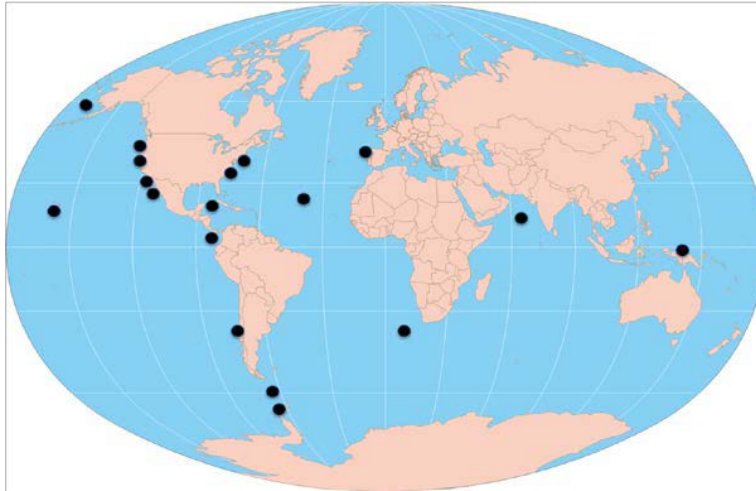
In the past year or so we have added six new Research Affiliates:

- Dr. Qing Wang (Meteorologist at Naval Postgraduate School). She studies environmental effects of electromagnetic wave propagation, air-sea interactions, and boundary layer processes.
- Dr. Iliana Ruiz-Cooley studies trophic dynamics, and environmental habitat mapping using stable isotopes.
- Dr. Tim Stanton (Physical Oceanographer at the Naval Postgraduate School in Monterey, CA. He studies turbulent boundary layers, ocean/ice interactions in polar regions, and wave and sediment dynamics.
- Dr. Joe Bizzarro (Ichthyologist with National Marine Fisheries Service). He studies abundance, distribution, age, growth, and foraging ecology of elasmobranchs.
- Dr. Coleen Durkin is a biological oceanographer who studies the vertical export of particles, phytoplankton physiology, and environmental genetics.
- Dr. Kim Null studies nutrient cycling and dynamics in coastal and groundwater systems throughout the globe.

## *Faculty*

The MLML/SJSU faculty has been very active in their research pursuits. All of the faculty members are fully funded and conducting research projects throughout the world. (The figure below depicts research location for MLML scientists in 2015/16). Three of the nine faculty members are new this past year, but we do have a

couple of faculty that are getting closer to retirement, so the faculty at some point will need to discuss the future of the faculty composition.



### *Proposal for a new Center For Aquaculture*

We expect to greatly expand our vision of the proposed Center For Aquaculture in the coming years. We have a proposal for a new ORTU that is in its final stages of approval at SJSU, we have a course in aquaculture that will be taught in Spring 2017, and we will be hiring a new California Sea Grant Extension Specialist that will be a Research Faculty member at MLML and a specialist in aquaculture. This person will help develop new courses in aquaculture science, will help bring in new sources of funding, and will help mentor students as they obtain a M.S. degree in marine science with a concentration in aquaculture. We are currently progressing on obtaining new sources of funding for the Center, and to further outfit the new building funded by Packard Foundation with instrumentation.



(L) Cultivating dulce seaweed at MLML's proposed Center for Aquaculture  
(R) Professor Graham pulls netting filled with sea lettuce covered by baby abalone

### *Marine Operations*

With the loss of the R/V Point Sur, MLML is considering future plans regarding vessels and personnel. We are in the early stages of assessing whether there are enough potential users (e.g. researchers and teachers) and whether there is a business plan that makes sense financially. The plan would include the joint operations of a vessel with the UC system, in particular, Scripps Institution of Oceanography (SIO). We anticipate that the vessel would serve the needs of the oceanographic community in the CSU and UC, and would be a member of the UNOLS fleet so NSF-sponsored research would also make use of the vessel. We are working with SIO to



judge the degree of interest in a coastal research vessel, and the characteristics of the vessel that would make it unique, useful, and efficient.

MLML/SJSU has hired a new Marine Operations Manager (Brian Ackerman) who has experience overseeing the purchase and retrofitting of research vessels, and also has experience managing a complex and dynamic marine operations. MLML continues to operate 12 research vessels ranging in size from 14' to 57'. These vessels are used by a variety of institutions (e.g. Monterey Bay Aquarium Research Institute, Naval Postgraduate School, Monterey Bay Aquarium, UC Santa Cruz, and CSU campuses).



## *Facilities*

This coming year we have funding and donations that will expand the number of seawater tanks at the aquaculture facility. New plumbing and electrical installations will provide more resources for the expanding users of the aquaculture facility. In anticipation of a new research vessel arriving in the future, MLML is starting to make improvements to the Del Mar property that is the large wharf owned by MLML/SJSURF in the Moss Landing harbor. This space is in need of repairs, and the first step is demolition of the existing structure and placement of new pilings. MLML is developing a site plan for the Sandholdt property next to the main building of MLML that would provide additional housing, conference space, and research labs. With NSF funding we completed a survey of potential users and investigated what could be constructed on the site. Now we need to move into developing a business plan and specific site plan with architectural drawings before we start fund raising for the project.

## *Housing*

Housing continues to be the most important impediment to further growth in education and research at MLML. Most other marine labs in the country have some form of housing to provide accommodations for weekend courses, summer courses, visiting scholars, and meetings. Without housing MLML will remain largely a graduate program with a limited amount of space for undergraduate students. The plans for development, as outlined above in the Facilities section, will allow us to expand and meet our objectives of greatly expanding our capabilities for undergraduate education, especially under-represented students, in marine science.

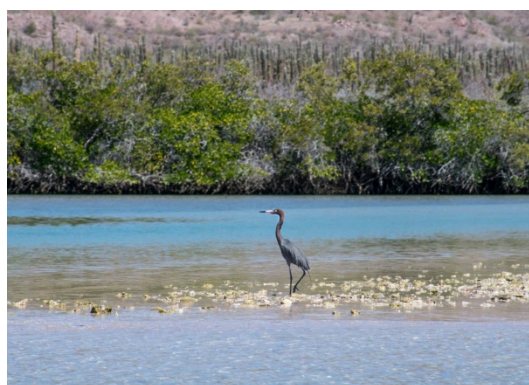


## *Visitor Center*

One of the requirements of our permit to build the main building at MLML after the 1989 Loma Prieta earthquake was to provide a Visitor Center. We have had limited funds to meet this requirement, and have slowly started to image the aspects of the Center. With some recent donations we have installed a museum-style kiosk in the entry way that has a slide show of images. Eventually, and with enough funding, we hope to install some interactive displays that allow visitors to virtually explore our labs, the Monterey Bay, surrounding wetlands and redwoods and learn more about local wildlife. A display such as this would invite potential graduate students to virtually explore our Master in Science program, learn more about the faculty and research, and watch videos showing students in the field, interviews with alumni and current student sharing their MLML experiences.



*Martin's View at MLML Main Lab*



*Great Blue Heron in the Slough below Martin's POV*

## *Development-Fundraising*

University Advancement at SJSU has recently announced that they will provide personnel and support for a fundraising campaign for MLML designed to raise funds for four themes (in no particular order):

- **Academic Village:** (housing, research labs, conference center) at the Sandholdt property next to the main lab. This much needed expansion will allow us to offer more courses, provide housing for summer and weekend courses, and will allow us to develop our concept of a conference center around the notion of Sustainable Ocean Science (SOS).
- **New Research Vessel:** With the sale of the NSF-owned R/V Point Sur, MLML has lost most of the capability for class cruises, larger research expeditions, supporting science for regional scientists, and an icon and symbol of MLML to the rest of the oceanographic world. We hope to purchase and operate (possibly in partnership with UCSD and Scripps Institution of Oceanography) a regional class vessel



possible of 95 – 120' in length. Our vision is that this vessel would serve the CSU throughout the State allowing classes and researchers access to a world-class research platform. We also propose this vessel would be used to address issues of concern for California, including climate change, sea level rise, ocean acidification, coastal erosion, and monitoring marine protected areas.

- **Proposal for a new Center For Aquaculture:** We maintain that one burgeoning field in California will be aquaculture, which in many ways is directly related to marine science and the CSU. The CSU is considered a leader in workforce development, and we believe MLML and the CSU could be a leader in development of a more robust, sustainable, and profitable aquaculture enterprise. MLML organized a meeting of all the CSUs with federal/state agencies, industry, and others this past year. We plan to lead the way in the development of training for the aquaculture industry, provide leadership in developing sustainable methods and sound science-based paths, and to provide sound advice to policy makers regarding permitting and regulations. We view this as a critical contribution to the economy of California, while providing research and job opportunities for our students. This will be a CSU-wide endeavor.
- **Student Success:** The success of the students at MLML is largely determined by the amount of financial support we can provide. Graduate students need resources for vessels, diving, instrumentation and supplies for their research. An immense concern for MLML students is how to fund personal costs (e.g. housing food, tuition). The Central Coast of CA is currently one of the most expensive places to live in the U.S (median rent in Santa Cruz County is over \$2000/month for a 1-bedroom apartment). MLML does not have the financial resources to support 75-85 graduate students (which is the current level), let alone to expand the graduate program or develop a robust undergraduate program. We propose to start a fundraising campaign for an endowment that would allow financial support for students in perpetuity.



# Appendix 1: MLML Grants & Awards

***MLML faculty, faculty researchers and research affiliates acquired 90 grants and awards totaling \$16.7 million during AY15-16. These funds are administered by the San José State University Research Foundation (SJSURF).***

## **FACULTY: (57 grants) \$4.7 million**

- Elkhorn Slough Restoration
- Characterizing Sub-Sea Floor Life and Environments in the Guaymas Basin
- Development of Best Management Practices To Reduce Methyl Mercury Exports and Concentrations From Seasonal Wetlands
- In Situ Sampling of Thermodynamics and Fog
- Collaborative Research: Investigations on Cycling of Mercury from the Ocean to Fog and Deposition to Land in Coastal CA
- Along-shelf Transport and Cross-shelf Exchange Driven by Surface Waves on the Inner Continental Shelf
- Japanese Tsunami Marine Debris (JTMD) and Alien Species Invasions PICES Year 2: Continued Interception, Acquisition
- Development of a Strategic Plan for Aquaculture Research and Education at the California State University
- Using Habitat-Specific, Spatial Demographic Information to Improve Stock Assessments of Ground Fishes
- 2015 East Bay Bridge Demolition Fish Surveys - ESA
- Effects of Climate Change Induced Ocean Acidification and Hypoxia on Reproduction of Rockfishes
- Water Pollution Control Lab, Rancho Cordova CA: *Alaska Dept. of Fish and Game, City of Santa Cruz, CA, Karuk Tribe, New Mexico Dept. of Game and Fish, CA Dept. of Fish and Wildlife, Sonoma County Environmental Health Dept., Morro Bay Foundation, Yurok Tribe* (water quality monitoring, sampling and analysis)
- Refugio Beach: National Resource Damage Assessment
- Elkgrove Dry Well Project
- BeachCombers Project
- Central and Northern Coast Ocean Observatory System (CeNCOOS)
- Office of Naval Research AGOR Support
- Enhanced Stranding Response (*partnership with UC Santa Cruz*)
- Estuarine Wetland and Near Shore Ecology Studies
- Shipboard Ballast Water Treatment Tests: Aquatic Invasive Species and Ballast Water Management

## **RESEARCH FACULTY: (8 grants) \$692,621**

- Alliance for Coastal Technologies (ACT): National Scale Efforts Towards Verification and Validation of Observation Technologies

- Monitoring and Assessments of CA's Marine Protected Areas
- Fisheries: Species Distribution Models, Data Collection Methods, Stock Assessment and Management
- Southern CA Behavioral Response Study on the Effects of Naval Sonar on Marine Mammals

**RESEARCH AFFILIATES: (25 grants) \$11.3 million:**

- Marine Pollution Studies Lab (MPSL) received grants to provide ongoing analytical services to the CA State Water Resources Control Board
- Surface Water Ambient Monitoring Program (SWAMP) is funded for continued bioassessments and data management
- Marine Optical Buoy (MOBY) Operations, Technology Development and Instrument Compatibility for Calibration with Ocean Color Satellites
- Central Coast Wetlands Group received a grant to develop guidance for management of estuaries in CA.
- Mercury and Methylmercury Sampling and Analysis

## Appendix 2: MLML Publications AY15-16

Please note MLML Researcher names in bold.

**TOTAL NUMBER OF PUBLICATIONS: 155**

Adams, J., W.A. Walker, E.J. Burton, and **J.T. Harvey**. 2015. Stomach contents of a Cuvier's beaked whale (*Ziphius cavirostris*) stranded in Monterey Bay, California. *Northwest Nat.* 96:93-98.

Aguilera, S.E., J. Cole, E.M. Finkbeiner, E. Le Cornu, N.C. Ban, M.H. Carr, J.E. Cinner, L.B. Crowder, S. Gelcich, C.C. Hicks, J.N. Kittinger, R. Martone, D. Malone, C. Pomeroy, **R.M. Starr**, S. Seram, R. Zuercher, K. Broad. 2015. Managing small-scale commercial fisheries for adaptive capacity: Insights from dynamic social-ecological drivers of change in Monterey Bay. *PLoS ONE* 10(3): e0118992. doi:10.1371/journal.pone.0118992

**Aiello, I.W.**, 2016, The Miocene hydrocarbon migration system: seep carbonates in the Santa Cruz area, California. In: Outcrops that change the way we practice petroleum geology, 100th Anniversary of the AAPG (in print).

**I.W. Aiello**, 2015, Elkhorn Slough TMRP: surface and subsurface properties and settlement potential at Minhoto and Hester Marsh. Elkhorn Slough National Estuarine Research Reserve. 15 pages.

**Alappattu, D. P., Q. Wang**, and J. A Kalogiros, 2016, Anomalous Propagation Conditions over Eastern Pacific Ocean Derived from MAGIC Data, *Radio Science*, **50**, doi:10.1002/2016RS005994.

**Denny P. Alappattu** and **Qing Wang**, 2015: Correction of Depth Bias in Upper-Ocean Temperature and Salinity Profiling Measurements from Airborne Expendable Probes. *J. Atmos. Oceanic Technol.*, 32, 247–255., doi: <http://dx.doi.org/10.1175/JTECH-D-14-00114.1>.

Arranz, P, DeRuiter, SL, **Stimpert, AK**, Neves, S, Friedlaender, AS, Goldbogen, JA, Visser, F, Calambokidis, J, Southall, BL, and Tyack, PL. In press. Discrimination of fast click series produced by tagged Risso's dolphins (*Grampus griseus*) for echolocation or communication. *Journal of Experimental Biology*.

Ashton, G. V., Davidson, I. C., **Geller, J.**, Ruiz, G. M. (2016). Disentangling the biogeography of ship biofouling: barnacles in the Northeast Pacific. *Global Ecology and Biogeography*. 25(6), 739-750

Ashton, G. V., Davidson, I. C., **Geller, J.**, Ruiz, G. M. (2016). Disentangling the biogeography of ship biofouling: barnacles in the Northeast Pacific. *Global Ecology and Biogeography*. 25(6), 739-750

Aspillaga, E., F. Bartumeus, C. Linares, **R.M. Starr**, À. López-Sanz, D. Díaz, M. Zabala, B. Hereu. 2016. Ordinary and extraordinary movement behaviour of small resident fish within a Mediterranean Marine Protected Area. *PLoS ONE* 11(7): e0159813. doi:10.1371/journal.pone.0159813

**Barnes, C.L., R.M. Starr,** and P.N. Reilly. 2015. Growth, mortality, and reproductive seasonality of California halibut (*Paralichthys Californicus*): a biogeographic approach. California Cooperative Oceanic Fisheries Investigations. Vol. 56, 2015.

**Benson, S.R.,** R.F. Tapilatu, N. Pilcher, P. Santidrián Tomillo, L. Sarti Martinez. 2015. Leatherback turtle populations in the Pacific. In: Spotila, J. and Santidrián Tomillo, P. (Eds.), *The Leatherback Turtle: Biology and Conservation*. The Johns Hopkins University Press.

**Bigman, J.S., Knuckey, J.D.S., & Ebert, D.A.** 2016. Color aberrations in Chondrichthyan fishes: first records in the genus *Bathyraja* (Chondrichthyes: Rajiformes: Arhynchobatidae). *Marine Biodiversity*, 46(3): 579-587.

Bjorkstedt, E., J. Field, M. Love, **L. Rogers-Bennett, R. Starr.** 2016. Marine fisheries. pp. 779-816 in: H. Mooney and E. Zavaleta (eds.) *Ecosystems of California*. University of California Press.

Bradie, J., M. Veldhuis, A. Curto, P. Stehouwer, N. **Welschmeyer, L.** Younan, S. Bailey, K. Broeg, S. Heitmuller, M. Rolke, C. Gianoli, J. He, A. Nakata, L. Schillak, A. Zaake, J. Vanden Byllaardt, 2016. A shipboard comparison of analytic devices for ballast water compliance monitoring. *Journal of Sea Research (Netherlands, submitted, special ballast water issue)*.

**Breaker:** Paper in La Tecnica sponsored by the University of Manabi Province on sea surface temperature variability off the coast of Ecuador in December 2015 (first author), and (3), published a paper entitled "Trends in sea surface temperature off the coast of Ecuador from 1900 to 2015" in the *Journal of Marine Systems* in September 2016 (first author).

**Cailliet, G.M. 2015.** Perspectives on elasmobranch life -history studies: a focus on age validation and relevance to fishery management. *Journal of Fish Biology* 87: 1271-1292.

**Cailliet, G.M. & Ebert, D.A.** 2015. The diversity and natural history of Chondrichthyan fishes. *Immunobiology of the Shark*. CRC Press, Chapter 1: 1-28.

Carretta, James V., K. Danil, S.J. Chivers, D.W. Weller, D.S. Janiger, M. Berman-Kowalewski, **K. M. Hernandez, J.T. Harvey,** R.C. Dunkin, D.R. Casper, S. Stoudt, M. Flannery, K. Wilkinson, J. Huggins, and D.M. Lambourn. 2015. Recovery rates of bottlenose dolphin (*Tursiops truncatus*) carcasses estimated from stranding and survival data. *Mar. Mamm. Sci.* 32(1): 349-362.

Caselle JE, Rassweiler AR, **Hamilton SL,** Warner RR. Recovery trajectories of kelp forest animals are rapid yet spatially variable across a network of temperate marine protected areas. *Scientific Reports* 15:14102 DOI:10.103/srep14102

**Clerkin, P.J. & Ebert, D.A.** In Press. First southeastern Atlantic record of the false catshark, *Pseudotriakis microdon* (Carcharhiniformes: Pseudotriakidae). *Marine Biodiversity*.

**K. Coale, W. Heim, H. Chiswell, A. Olson,** M. Johnson, P. Weiss-Penzias, D. Fernandez, Dimethyl Mercury in Seawater, A Potential Source of Monomethyl Mercury in Fog. Paper presented at the American Geophysical Union Fall Meeting, December 14th, 2015, San Francisco, California.

**Coale, K. H., Bitondo, A., Christensen, S., Drake, C. Fennie, W., Loiacono, S., Navas, G., Ghatt, G., Walovich, K, Woods, A., Worden, S.** 2015. John Holland Martin, from Picograms to Petagrams and Copepods to Climate. Association for the Sciences of Limnology and Oceanography Bulletin, November 2015 p 1-19.

**Coale, K. H., Bitondo, A., Christensen, S., Drake, C. Fennie, W., Loiacono, S., Navas, G., Ghatt, G., Walovich, K, Woods, A., Worden, S.** 2015. John Holland Martin, from Picograms to Petagrams and Copepods to Climate. Association for the Sciences of Limnology and Oceanography Bulletin, March 2016 Vol 25, issue 2, p 36-46.  
Doi: 10.1002/lob.10078

**Coale, K. H., Heim, W.,** Negre, J., Weiss-Penzias, P., Fernandez, D., **Olson, A., Chiswell, H., Byington, A., Bonnema, A., Martenuk, S., Newman, A., Beebe, C. and Till, C.** 2016. The distribution and speciation of mercury in the California Current: Implications for mercury transport via fog to land. Deep-Sea Research, Volume II, Submitted.

Concha, F.J., **Ebert, D.A.,** & Long, D.J. 2016. *Notoraja martinezi* sp. nov., a new species of deepwater skate and the first record of the genus *Notoraja* Ishiyama, 1958 (Rajiformes: Arhynchobatidae) from the eastern Pacific Ocean. Zootaxa, 4098(1): 179-190. Cailliet, G.M. 2015. Perspectives on elasmobranch life-history studies: a focus on age validation and relevance to fisheries management. Journal of Fish Biology, 87:1271-1292.  
doi:10.1111/jfb.12829

Corbett, D.R., Crenshaw, J., **Null, K.A.,** Petersen, R.N., Petersen, L.E., Lyons, W.B., Nearshore mixing and Nutrient Delivery along the Western Antarctic Peninsula. Antarctica Sciences, accepted.

Crocker, D.E. & **B.I. McDonald.** 2015. Chapter 10: Post-partum reproduction. In: Marine Mammal Physiology: Requisites for Ocean Living. Eds. M.A. Castellini & J.A. Mellish. CRC Press, Boca Raton.

Curtis, K.A., J.E. Moore, **S.R. Benson.** 2015. Estimating Limit Reference Points for Western Pacific Leatherback Turtles (*Dermochelys coriacea*) in the U.S. West Coast EEZ. PLoS ONE 10(9): e0136452.  
doi:10.1371/journal.pone.0136452

J.A. Davis, J.R.M. Ross, S. Bezalel, L. Sim, **A. Bonnema, G. Ichikawa, W.A. Heim,** K. Schiff, C.A. Eagles-Smith, J.T. Ackerman, Hg concentrations in fish from coastal waters of California and Western North America, Science of The Total Environment, Available online 9 April 2016, ISSN 0048-9697,  
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# Appendix 3: Media Highlights

## *Media Highlights 2015-2016*

Moss Landing Marine Labs has always had a productive and positive relationship with local media, nature journalists and wildlife programs, both national and international. MLML is a regular stop for The Discovery Channel and has been the focus of Shark Week episodes for almost a decade. Local news channels for ABC, NBC and CBS make regular visits to the lab to talk about current research, student activities or to interview our researchers about emergent ocean science events and issues. MLML tries to maintain an active social media profile and has a very popular Facebook page:

<https://www.facebook.com/mosslandingmarinelabs/>

In AY15-16, MLML's Pacific Science Research Center headed by Dr. Dave Ebert was again featured on The Discovery Channel's Shark Week, we contributed specimens and subject matter expertise to the joint BBC/PBS three-day, live broadcast "*Big Blue Live*" that aired over Labor Day in 2015 and the Media Open House held in August 2016 for our 50<sup>th</sup> Anniversary yielded coverage on stations throughout the Central Coast and San Francisco Bay Area, including the cover of the Silicon Valley Business Journal in August 2016, featuring the (proposed) Center For Aquaculture.

Additional media included:

- 50<sup>th</sup> Anniversary Coverage
  - <http://abc7news.com/science/moss-landing-marine-labs-focused-on-research--/1457832/>
  - <http://www.kionrightnow.com/news/local-news/moss-landing-marine-laboratories-turns-50/41060820>
  - <http://www.kionrightnow.com/news/local-news/local-marine-lab-celebrates-50-year-anniversary/41060778>
  - [http://www.bizjournals.com/sanjose/news/2016/08/18/from-lagoon-to-spoon-aquaculture-gets-a-boost.html?surround=etf&ana=e\\_article&u=ZmXAzlMKB%2B%2FT9smpTd6kEA0cbc9aad&t=1471975101&=75524962](http://www.bizjournals.com/sanjose/news/2016/08/18/from-lagoon-to-spoon-aquaculture-gets-a-boost.html?surround=etf&ana=e_article&u=ZmXAzlMKB%2B%2FT9smpTd6kEA0cbc9aad&t=1471975101&=75524962)
- White House blog on inter-agency cooperation to develop capacities for nutrient monitoring and mitigation. Dr. G. Jason Smith, MLML research faculty is the Pacific-Coast technical Coordinator for the Alliance for Coastal Technologies (ACT)
  - <https://www.whitehouse.gov/blog/2016/08/03/improving-nutrient-management-and-reducing-pollution-through-open-innovation-prizes>
- Dr. Kenneth Coale was interviewed and featured in several publications, articles and news stories about his research looking at levels of mercury found in the fog along the Northern and Central CA coast.
  - <http://www.santacruzsentinel.com/article/NE/20151225/NEWS/151229822>
  - <http://www.ecowatch.com/mercury-laden-fog-swirls-over-california-coastal-cities-1882143694.html>
  - <http://www.popsci.com/mercury-observed-in-coastal-fog-off-california>
  - <http://www.mercurynews.com/2016/01/04/marins-heavy-coastal-fog-could-be-carrying-mercury-into-ecosystem/>
- MLML featured in the Los Angeles Times *Daily News Magazine* as part of a cover story on Cal State University.
  - <http://ladailynews.travidia.com/SS/Tiles.aspx>



- Oakland Bay Bridge Demolition, October 2015: The MLML team from Dr. Rick Starr's CA Collaborative Fisheries Research Program (CCRP) lab was featured in several San Francisco Bay Area news broadcasts and publications. The team spent Halloween weekend in 2015 monitoring the waters surrounding the demolition site to track fish mortalities.
  - <http://www.sfgate.com/bayarea/article/Bay-Bridge-demolition-set-for-early-Saturday-6632160.php>
- The (proposed) Center For Aquaculture and Professor Michael Graham of the Phycology Lab were featured in local newspapers throughout the year (*Santa Cruz Sentinel*, *Monterey County Weekly*) and was selected by the Chancellor's Office to be "In The Spotlight" of the CSU News website.
  - <http://www.santacruzsentinel.com/science/20160127/aquaculture-the-next-great-monterey-county-frontier>
  - <http://news.calstate.edu/csu-collaboration-to-strengthen-california-aquaculture/>
  - [http://www.montereycountyweekly.com/news/cover/monterey-bay-seaweeds-brings-seaweed-superpowers-to-plates/article\\_0424d1f2-38ac-11e6-8959-4f8fd23ed8ee.html](http://www.montereycountyweekly.com/news/cover/monterey-bay-seaweeds-brings-seaweed-superpowers-to-plates/article_0424d1f2-38ac-11e6-8959-4f8fd23ed8ee.html)
- AY2015-2016 saw a tremendous increase in marine mammal activity throughout the Monterey Bay. Dr. Jim Harvey was interviewed by local NBC, CBS and ABC affiliates as well as news publications as an expert on whales, orcas and the effects of El Nino on the Monterey Bay ecosystem.
  - <http://www.santacruzsentinel.com/20160419/high-number-of-killer-whales-spotted-in-monterey-bay>
  - <http://www.kionrightnow.com/news/local-news/dead-whale-of-west-cliff-may-be-the-result-of-more-orcas-in-the-monterey-bay/39366164>
- Whale Disentanglements: MLML's Scott Benson and Captain JD Douglas are Level IV responders for NOAA's Whale Entanglement Team (WET). They performed numerous disentanglements of humpback, blue and gray whales throughout the year and were recognized by NOAA in press releases issued internationally and picked up by major news outlets in several countries.
  - <http://www.santacruzsentinel.com/environment-and-nature/20160422/monterey-bay-humpback-whale-freed-while-orcas-feed-froli>
  - <http://www.cawhalerescue.org/news/2016/5/11/california-whale-rescue-responders-disentangle-humpback-whale-off-carmel-coast>
- Great White Sharks: the coastline between Capitola and Manresa State Beaches in the Monterey Bay has experienced a tremendous increase in Great White Sharks over the last 2 years. MLML's Dr. Dave Ebert and his students served as a subject matter expert several times throughout the year for local and national news broadcasts and publications.
  - <http://www.kionrightnow.com/news/local-news/what-to-do-if-you-encounter-shark-while-kayaking/35450810>
  - <http://www.kionrightnow.com/news/local-news/group-of-great-white-sharks-spotted-at-seacliff-beach-in-aptos/39602028>
  - [http://www.nbcbayarea.com/news/local/Great-White-Sharks-Spotted-in-Santa-Cruz-384005641.html?\\_osource=SocialFlowFB\\_BAYBrand](http://www.nbcbayarea.com/news/local/Great-White-Sharks-Spotted-in-Santa-Cruz-384005641.html?_osource=SocialFlowFB_BAYBrand)

- KION TV, local CBS affiliate featured MLML during a Special Report in May 2016 on the town of Moss Landing: *"An Inside Look At Moss Landing Marine Labs"* interviewing Professor Emeritus Dr. Greg Cailliet about the history and mission of MLML
  - <http://www.kionrightnow.com/news/local-news/inside-look-moss-landing-marine-labs/39637580#.Vz6dFantc8>
- The Salinas Californian selected the Friends of MLML as their non-profit of the month: *"The Spirit of Moss Landing"*
  - <http://www.thecalifornian.com/story/life/2016/07/07/friends-and-spirit-moss-landing/86782292/>
- Ross Clark of the Central Coast Wetlands Group (CCWG) continued publishing his regular column in the Santa Cruz Sentinel *"Earth Matters"*
  - <http://www.santacruzsentinel.com/environment-and-nature/20160630/ross-clark-earth-matters-changing-the-rules-as-climate-changes-too>

## MLML Film

MLML commissioned an alumnus and a local filmmaker to make a short film that could be used to recruit new students, donors and research partners. The film also needed to describe and illustrate the complexity of the lab's organizations to local, regional and State officials, stakeholders and representatives within the CSU seeking to understand who we are and what we do; a daunting mission to undertake in only 6-8 minutes.

Footage was donated by MBARI, wildlife photographers, and underwater filmmakers. Footage was captured of our students in the field and classroom, interviews were videotaped, a narration track was recorded, and maps were woven in to bring context to the Monterey Bay area.

The resulting film has been viewed by the MLML Governing Board, the MLML community, alumni, and guests at the 50<sup>th</sup> Anniversary VIP reception. Audience reactions have been positive, although faculty and advisors within the CSU system requested more footage of students, particularly showing where they ended up after graduation, and more details on locales in the world where MLML employees are conducting research.



Stephanie Schneider and team, Grad student in the Vertebrate Ecology Lab  
Castle Rock, Humboldt County monitoring Common Murres



Chemical oceanographers deploy benthic chambers to  
measure mercury flux in the SF Bay Delta Complex

## **Appendix 4: Governing Board Members**



## Governing Board Meeting May 2016

### BOARD OF GOVERNORS

<b>CALIFORNIA STATE UNIVERSITY, EAST BAY</b> 25800 Carlos Bee Ave. Hayward, CA 94542			<b>Members</b>	<b>Alternates</b>
Biological Sciences			Dr. James Murray Biology Tel: (925) 788-0557 <a href="mailto:james.murray@csueastbay.edu">james.murray@csueastbay.edu</a>	Dr. Tyler Evans Biology Tel: (510) 885-3475 <a href="mailto:tyler.evans@csueastbay.edu">tyler.evans@csueastbay.edu</a>
			Dr. Michael D. Lee <b>*Chair*</b> Anthro Geo & Env Stud (AGES) MLML Coast/CSU Aquaculture Tel: (510) 885-3155 <a href="mailto:michael.lee@csueastbay.edu">michael.lee@csueastbay.edu</a>	
Administration			Dr. Jason Singley Dean, College of Science Tel: (510) 885-3441 <a href="mailto:jason.singley@csueastbay.edu">jason.singley@csueastbay.edu</a>	
<b>CALIFORNIA STATE UNIVERSITY, FRESNO</b> 5241 N. Maple Ave Fresno, CA 93740			<b>Members</b>	<b>Alternates</b>
Biological Sciences			(C) Dr. Alejandro Calderon-Urrea Biology Tel: (559) 278-2001 <a href="mailto:calalea@csufresno.edu">calalea@csufresno.edu</a>	Dr. Paul Crosbie Biology Tel: (559) 278-4244 <a href="mailto:pcrosbie@csufresno.edu">pcrosbie@csufresno.edu</a>
Physical Sciences			Mathieu Richaud <b>*Vice Chair*</b> Earth & Environmental Sciences Tel: (559) 278-4557 <a href="mailto:mathieu@csufresno.edu">mathieu@csufresno.edu</a>	
Administration				

<b>CALIFORNIA STATE UNIVERSITY, MONTEREY BAY</b> 100 Campus Center Seaside, CA 93955-8011		
	<b>Members</b>	<b>Alternates</b>
Marine Sciences	Dr. James Lindholm Science & Environmental Policy Tel: (831) 582-4662 <a href="mailto:jlindholm@csumb.edu">jlindholm@csumb.edu</a>	Dr. Rikk Kvitek Science & Environmental Policy Tel: (831) 582-3529 <a href="mailto:rkvitek@csumb.edu">rkvitek@csumb.edu</a>
Physical Sciences	<del>Dr. Doug Smith, Chair</del> <del>Science &amp; Environmental Policy</del> <del>Tel: (831) 582-4696</del> <del><a href="mailto:dsmith@csumb.edu">dsmith@csumb.edu</a></del>	Dr. Sharon Anderson Science & Environmental Policy Tel: (831) 582-3915 <a href="mailto:shanderson@csumb.edu">shanderson@csumb.edu</a>
Administration	Dr. Andrew Lawson Dean, College of Science <a href="mailto:alawson@csumb.edu">alawson@csumb.edu</a>	

<b>CALIFORNIA STATE UNIVERSITY, SACRAMENTO</b> 6000 J St. Sacramento, CA 95819		
	<b>Members</b> *follow up to confirm*	<b>Alternates</b>
Biological Sciences	Dr. Bill Avery Biology Tel: (916) 278-6279 <a href="mailto:averyw@csus.edu">averyw@csus.edu</a>	Dr. Ron Coleman Biology Tel: (916) 278-3474 <a href="mailto:rcoleman@csus.edu">rcoleman@csus.edu</a>
Administration	Rose Castillo Assistant to the Dean, Natural Sciences & Mathematics Tel: (916) 278-7670 <a href="mailto:rcastill@csus.edu">rcastill@csus.edu</a>	Dr. Amy Wagner Assistant Professor Geology Dept. Tel: (916) 278-5136 <a href="mailto:Amy.wagner@csus.edu">Amy.wagner@csus.edu</a>

<b>SAN FRANCISCO STATE UNIVERSITY</b> 1600 Holloway Ave. San Francisco, CA 94132		
	<b>Members</b>	<b>Alternates</b>
Biological Sciences	Dr. Jonathon Stillman Romberg Tiburon Center Tel: (415) 338-3790 <a href="mailto:stillmaj@sfsu.edu">stillmaj@sfsu.edu</a>	Dr. Sarah Cohen Romberg Tiburon Center Tel: (415) 338-3750 <a href="mailto:sarahcoh@sfsu.edu">sarahcoh@sfsu.edu</a>
Physical Sciences	Dr. Tomoko Komada Romberg Tiburon Center Tel: (415) 338-3748 <a href="mailto:tkomada@sfsu.edu">tkomada@sfsu.edu</a>	ALT TBD
Administration	Dr. Keith Bowman College of Science & Engineering Tel: (415) 338-1571 <a href="mailto:kjbowman@sfsu.edu">kjbowman@sfsu.edu</a>	Dr. Karina Nielsen Romberg Tiburon Center (415) 338-3713 <a href="mailto:knielson@sfsu.edu">knielson@sfsu.edu</a>



<b>SAN JOSE STATE UNIVERSITY</b> One Washington Square San Jose, CA 95192		
	<b>Members</b>	<b>Alternates</b>
Biological Sciences	Dr. Shannon Bros-Seeman Biology Tel: (408) 924-4896 <a href="mailto:Shannon.Bros@sjsu.edu">Shannon.Bros@sjsu.edu</a>	
Physical Sciences	Dr. Manny Gabet Geology Tel: 408-924-5035 <a href="mailto:manny.gabet@sjsu.edu">manny.gabet@sjsu.edu</a>	Dr. June Oberdorfer Geology Tel: (408) 924-5026 <a href="mailto:june@geosun.sjsu.edu">june@geosun.sjsu.edu</a>
Administration	Dr. Pam Stacks Associate Vice President (ex officio), Research Tel: (408) 924-2488 <a href="mailto:Pamela.Stacks@sjsu.edu">Pamela.Stacks@sjsu.edu</a>	
	Dr. Michael Parrish Dean, College of Science Tel: (408) 924-4800 <a href="mailto:Michael.Parrish@sjsu.edu">Michael.Parrish@sjsu.edu</a>	Dr. Gilles Muller Assoc. Dean, Research Tel: (408) 924-2632 <a href="mailto:Gilles.muller@sjsu.edu">Gilles.muller@sjsu.edu</a>
<b>CC on all Gov Board Comms:</b>	Andy Feinstein Provost SJSU <a href="mailto:Andy.feinstein@sjsu.edu">Andy.feinstein@sjsu.edu</a>	Sandeep Muju Director SJSU Research Foundation <a href="mailto:Sandeep.muju@sjsu.edu">Sandeep.muju@sjsu.edu</a>

<b>CALIFORNIA STATE UNIVERSITY, STANISLAUS</b> 801 W. Monte Vista Ave. Turlock, CA 95382		
	<b>Members</b>	<b>Alternates</b>
Biological Sciences	Dr. Patrick Kelly Biological Sciences Tel: (209) 667-3446 <a href="mailto:pkelly@csustan.edu">pkelly@csustan.edu</a>	Dr. Ritin Bhaduri Biological Sciences (209) 667-3485 <a href="mailto:rbhaduri@csustan.edu">rbhaduri@csustan.edu</a>
Physical Sciences	Dr. Horacio Ferriz Physics, Physical Sciences & Geology Tel: (209) 667-3466 <a href="mailto:hferriz@geology.csustan.edu">hferriz@geology.csustan.edu</a>	Dr. Julia Sankey Physics, Physical Sciences & Geology Tel: (209) 667-3090 <a href="mailto:julia@geology.csustan.edu">julia@geology.csustan.edu</a>
Administration	Dr. Mark Grobner Interim Dean, College of Natural Sciences Tel: (209) 667-3153 <a href="mailto:mgrobner@csustan.edu">mgrobner@csustan.edu</a>	

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**MOSS LANDING MARINE  
LABORATORIES**8272 Moss Landing Rd.  
Moss Landing, CA 95039**Members****Alternates**

## Marine Sciences

Dr. Mike Graham  
Phycology  
Tel: (831) 771-4481  
[mgraham@mlml.calstate.edu](mailto:mgraham@mlml.calstate.edu)Dr. Scott Hamilton  
Ichthyology  
Tel: (831) 771-4497  
[shamilton@mlml.calstate.edu](mailto:shamilton@mlml.calstate.edu)Dr. Nick Welschmeyer  
Biological Oceanography  
Tel: (831) 771-4439  
[welschmeyer@mlml.calstate.edu](mailto:welschmeyer@mlml.calstate.edu)Dr. Ivano Aiello  
Geological Oceanography  
Tel: (831) 771-4480  
[iaiello@mlml.calstate.edu](mailto:iaiello@mlml.calstate.edu)

## Administration

Dr. Jim Harvey  
Director  
Tel: (831) 771-4402  
[iharvey@mlml.calstate.edu](mailto:iharvey@mlml.calstate.edu)Kathleen Donahue  
Assistant to Director  
Tel: (831) 771-4405  
[kdonahue@mlml.calstate.edu](mailto:kdonahue@mlml.calstate.edu)

Appendix 5

EO 1103 – CSU Response March 2016

The California State University:

Chancellor's Office

Bakersfield

Channel Islands

Chico

Dominguez Hills

East Bay

Fresno

Fullerton

Humboldt

Long Beach

Los Angeles

Maritime Academy

Monterey Bay

Northridge

Pomona

Sacramento

San Bernardino

San Diego

San Francisco

San José

San Luis Obispo

San Marcos

Sonoma

Stanislaus

March 24, 2016

To: Dr. Zed Mason  
Interim Assistant Vice Chancellor

Dr. Loren Blanchard  
Executive Vice Chancellor

From: Susan W. Martin  
Interim President



Subject: EO 1103 and Moss Landing Marine Labs

Enclosed please find the additional information you requested regarding EO 1103 and Moss Landing Marine Labs. Please do not hesitate to contact me for further information.

**Response to letter from the Chancellor's Office to Interim President Dr. Susan W. Martin dated 18 December 2015.**

According to the letter dated 18 December 2015 (Appendix A), MLML was provided conditional authorization to continue current operations under EO 1103 until May 6<sup>th</sup>, 2016. To be fully authorized, the letter indicated that further information was required, which included six revisions to the original material submitted for authorization. We will address each of the six requested pieces of information below.

**1) A revised 5-year strategic plan that includes a mission and vision statement, priorities and guiding principles, goals and measurable objectives that shall form the basis of a results-based accountability system. The revised strategic plan should include an implementation plan and schedule, and mechanisms for monitoring and evaluating progress of the MLML in meeting the primary mission and goals that will ultimately provide data that will be used in the development of future strategic planning and implementation efforts. While not a requirement, we would encourage that MLML have the strategic plan approved by their Governing Board or the necessary authorizing entities by April 1, 2016.**

We request a submission extension of the plan until June 30, 2017 for the following reasons:

- Mary Papazian will begin her presidency at SJSU July 1, 2016.
- SJSU's current strategic plan (Vision 2017 -- <http://www.sjsu.edu/president/strategicplanning/> ) will expire at the end of 2017 and a new strategic planning policy has just been approved by the Academic Senate and the president. 2016/17 will be a planning year at SJSU and this additional time will allow MLML's and SJSU's plans to be in alignment.
- A robust and consultative planning process spanning the 16/17 academic year will provide appropriate time to broadly engage stakeholders.
- The plan must be approved by the MLML Governing Board and the administration of SJSU. This process will need to coincide with regularly scheduled board meetings.
- The chancellor is currently reviewing MLML's consortium and financial models. An extension will allow the Chancellor to provide MLML with informed guidance in the planning process.

**2) Organizational chart that clarifies the relationship between the MLML Director, the Governing Board, the Executive Committee, administration at the administrative campus (San Jose State University), the Chancellors Office, the Chair of MLML and the MLML associated student representative.**



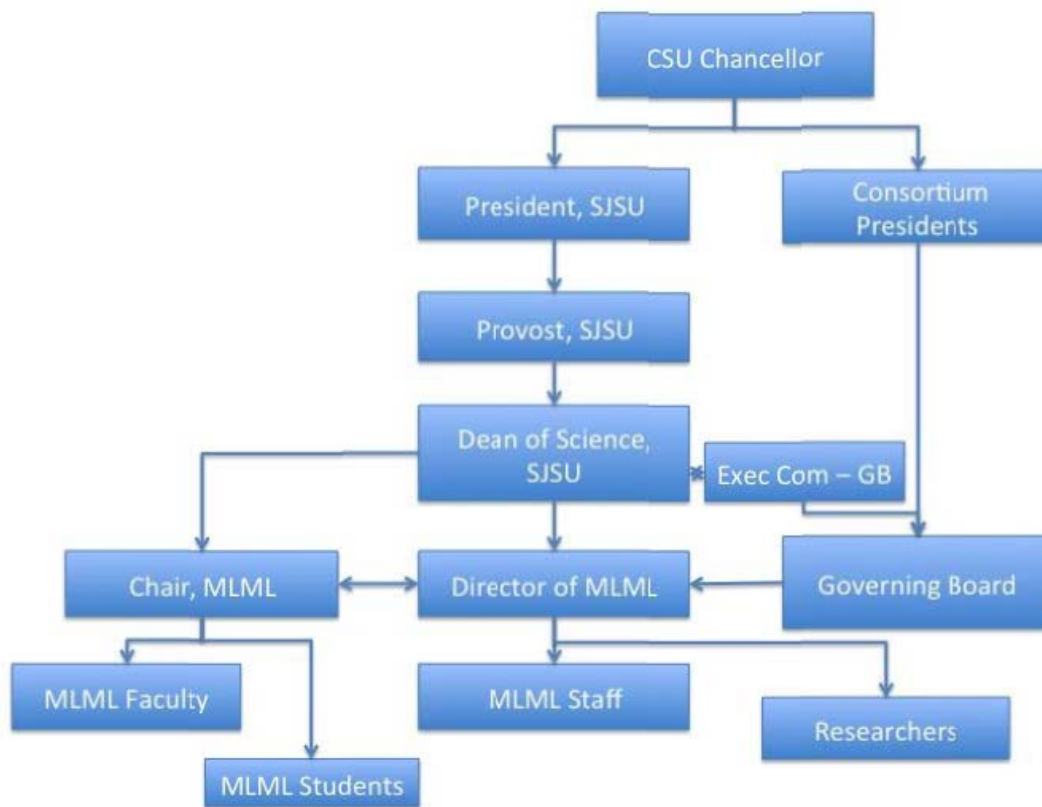


Fig. 1. Organizational chart for MLML.

The MLML Director manages the operations of the lab, oversees the 6 properties, provides access and resources for the research staff, and interacts with the Chair and faculty of MLML to support the educational program (Fig. 1). The Director interacts weekly with the Chair of MLML regarding curricular issues, faculty needs, and instructional requirements. The Chair articulates the financial requirements of the department and the Director works with the Assistant to the Director to develop a budget that supports the educational needs of MLML. The Director is invited to twice monthly faculty meetings. Faculty meetings include all the tenure/ tenure track (T/TT) faculty and representatives of the Research Faculty/Affiliates and the Student Body. Generally, the faculty meetings are used to discuss relevant issues of MLML and the output of those discussions provide input to the Director for needed actions, which the Director then executes based on their judgment. The students of MLML are organized with officers, and these officers meet regularly with the student body. The Director attends about two student body meetings a year to inform the students regarding current issues at MLML, and to answer any questions. The Director also meets with the Student Body Officers as needed. The Governing Board provides input to the Director regarding direction of the lab and provides oversight regarding curriculum changes and review of the Director's performance. The Executive Committee in the past was the primary committee within the Governing Board that dealt with oversight of the MLML budget, but in the past two years the entire Governing Board has covered those topics. Thus, the Executive

Committee has met infrequently in the recent past. The Director reports to the Dean of Science at SJSU regarding major decisions associated with MLML, such as development, major acquisitions, annual budgets, personnel changes, etc. The Director also interacts with the AVP for Research and the Provost at SJSU to seek guidance regarding decisions, vision, and procedures. When necessary, the Chancellor's Office becomes involved in decisions associated with MLML via a path that flows from Director of MLML to Dean of Science (SJSU), to Provost, to President, to Chancellor or in the opposite direction. Occasionally, the Director or other members of the MLML staff will engage with personnel at the Chancellor's Office to deal with such issues as IT or Library services, or a CSU-wide program (e.g. recent interest in a CSU Center for Aquaculture).

### **3) Clarify the term “regular faculty” (MLML Rules of Operation 3.1)**

The term “regular faculty” as used in the Rules of Operation refers to Tenure/Tenure Track faculty members and as defined by the CFA bargaining agreement.

### **4) Criteria and process for selecting and evaluating research faculty and associates. Information required on classification and term of research faculty.**

Research Faculty and Research Affiliates are non-State employees that conduct research and contract work associated with MLML, hence they occupy soft money positions as employees of the SJSU Research Foundation. We consider Research Faculty to have an interest and activity associated with the academic mission of MLML, hence they may occasionally teach courses and advise students. Research Affiliates generally do not teach classes and do not mentor students. We have established guidelines for the selection and evaluation of Research Faculty and Research Affiliates (Appendix B). Research Faculty members are selected based on a review and approval by the MLML Faculty and Director after submitting a CV, letter of interest, and presenting a research seminar. Research Faculty members are provided PI status after a review and approval by SJSU and SJSU Research Foundation (SJSURF) administration. They also are provided with access to MLML resources (library, email, phone, FAX, vessels, vehicles, and dive equipment). The RTP committee and Director of MLML review them every three years. The MLML Faculty and Director approve Research Affiliates after reviewing a CV and Letter of Interest. The RTP Committee and Director of MLML review Research Affiliates every three years. Research Affiliates may act as a co-PI or a PI if granted that status by the MLML Director and administration of SJSU and SJSURF. The resources available to Research Affiliates are established by the Director of MLML.

### **5) Guidelines for suspension and dissolution.**

The guidelines for suspension or dissolution of MLML are not in the current MLML Bylaws but proposed wording is presented below.

*Suspension or dissolution of MLML can be called for by either the Chancellor or the Governing Board. One fiscal year's advance notice will be given to MLML in the event that suspension or dissolution of MLML is called for by the Chancellor.*

*A decision to suspend or dissolve MLML by the Governing Board must involve a consultative process and agreement between the campus membership and other stakeholders in support of such action and requires the concurrence of the President of the Operating Institution. Any such recommendation to dissolve MLML must be justified, made in writing, and submitted to the Chancellor by the President of the Operating Institution.*

*Within one month of the notification of suspension or dissolution, the Chair of the Governing Board will present a separation plan to the President of the Operating Institution and the Assistant Vice Chancellor of Research, including a detailed justification for the temporary continuance of activities and the required funding necessary to meet outstanding obligations to ensure a controlled reduction in MLML activity towards suspension or dissolution. Consideration of reactivation of MLML following dissolution will require the submission of a new authorization proposal under EO 1103.*

6) Clarify criteria and process for the addition of non-CSU partners - if appropriate.

MLML collaborates with other research institutions in Central California and particularly with institutions around Monterey Bay. As it was established, the MLML consortium was only an association of CSU campuses, and there may be an addition of other CSU campuses. There have been discussions of developing a joint Ph.D. program with different UC campuses (i.e., UC Santa Cruz and UC Davis). The MLML By Laws do allow non-CSU partners: "In special cases, the MLML Governing Board may also recommend to the Consortium Presidents formal affiliations with institutions outside the CSU for the purpose of promoting the mission of MLML. Examples may include PhD granting universities, research institutions, or other non-commercial collaborative groups, government agencies, or consortia with shared goals and purposes."

**Appendix A. Letter from the Chancellor's Office indicating conditional authorization of MLML and required revisions to the original Annual Report.**



401 Golden Shore, 6th Floor  
Long Beach, CA 90802-4210

[www.calstate.edu](http://www.calstate.edu)

A.Z. Mason, Ph.D.  
Interim Assistant Vice Chancellor for  
Research Initiatives and Partnerships  
562-951-4513/Fax 562-951-4867  
E-mail [zmason@calstate.edu](mailto:zmason@calstate.edu)

Loren J. Blanchard, Ph.D.  
Executive Vice Chancellor for  
Academic and Student Affairs  
Telephone: 562-951-4710  
Email: [lblanchard@calstate.edu](mailto:lblanchard@calstate.edu)

December 18, 2015

Dr. Susan W. Martin  
Interim President  
San José State University  
One Washington Square  
San Jose CA 95192

Dear President Martin,

We are pleased to inform you that the materials submitted for the authorization of the Moss Landing Marine Laboratories (MLML) have met the majority of the provisions articulated under EO 1103 to demonstrate good standing for the expedited approval of prior established, permanently structured systemwide or multi-campus centers, institutes, or affinity groups.

Accordingly, the MLML is conditionally authorized to continue current operations under EO 1103 until May 6, 2016. To be fully authorized beyond this period, we are asking that you submit the documentation/revisions outlined in Appendix 1 for consideration by Friday April 1, 2016. The requested materials should be submitted via email to Polly Huggins [phuggins@calstate.edu](mailto:phuggins@calstate.edu). Failure to submit the required revisions, or an inability to meet the general provisions under EO 1103, could result in the suspension or dissolution of the MLML. Under these circumstances, the authorization of MLML would require the submission and approval of a new proposal as indicated in section D of EO 1103.

We look forward to hearing from you in due course and encourage you to submit any questions or concerns you may have regarding the process moving forward to Polly Huggins [phuggins@calstate.edu](mailto:phuggins@calstate.edu).

Sincerely,

A.Z. Mason, Ph.D.  
Interim Assistant Vice Chancellor  
Research Relationships and Partnerships

Loren J. Blanchard, Ph. D.  
Executive Vice Chancellor  
Academic and Student Affairs

c: Timothy White, Chancellor  
Andrew Feinstein, Provost, San Jose State University  
James Harvey, Director of Moss Landing Marine Laboratories

**CSU Campuses**  
Bakersfield  
Channel Islands  
Chico  
Dominguez Hills  
East Bay

Fresno  
Fullerton  
Humboldt  
Long Beach  
Los Angeles  
Maritime Academy

Monterey Bay  
Northridge  
Pomona  
Sacramento  
San Bernardino  
San Diego

San Francisco  
San José  
San Luis Obispo  
San Marcos  
Sonoma  
Stanislaus

APPENDIX 1

Required revisions. Due by Friday April 1, 2016. Please forward materials to [phuggins@calstate.edu](mailto:phuggins@calstate.edu).

- 1) A revised 5-year strategic plan that includes a mission and vision statement, priorities and guiding principles, goals and measurable objectives that shall form the basis of a results-based accountability system. The revised strategic plan should include an implementation plan and schedule, and mechanisms for monitoring and evaluating progress of the MLML in meeting the primary mission and goals that will ultimately provide data that will be used in the development of future strategic planning and implementation efforts. While not a requirement, we would encourage that MLML have the strategic plan approved by their Governing Board or the necessary authorizing entities by April 1, 2016.
- 2) Organizational chart that clarifies the relationship between the MLML Director, the Governing Board, the Executive Committee, administration at the administrative campus (San Jose State University), the Chancellors Office, the Chair of MLML and the MLML associated student representative.
- 3) Clarify the term “regular faculty” (MLML Rules of Operation 3.1)
- 4) Criteria and process for selecting and evaluating research faculty and associates. Information required on classification and term of research faculty.
- 5) Guidelines for suspension and dissolution.
- 6) Clarify criteria and process for the addition of non-CSU partners - if appropriate.



**Appendix B. Guidelines for Adjunct Faculty, Research Faculty, and Research Affiliates at MLML.**



**MOSS LANDING MARINE LABORATORIES**

**GUIDELINES FOR**

**ADJUNCT FACULTY, RESEARCH AFFILIATE, AND RESEARCH FACULTY**

**I. Mission Statement:**

It is the policy of MLML to establish professional relationships with scientists capable and willing to make positive contributions towards the research and academic goals of the laboratories. MLML recognizes that these scientists offer a diversity of opportunities to the regular (tenure or tenure-track) faculty and students. MLML seeks to formally acknowledge this contribution by awarding titles, as appropriate, to these individuals. This process serves also to provide a formal institutional affiliation for these researchers to enhance their professional goals.

A complete delineation of the three categories is provided in Appendix A. Briefly, **Adjunct Faculty** members are those researchers not in residence that seek a formal relationship with MLML. **Research Affiliates** are those researchers in residence at MLML that do not hold the Ph.D. degree or typically do not seek to work autonomously with regard to submitting grants as a PI, or do not wish to serve in the capacity as outlined in Appendix A. In special circumstances, MLML will grant **Research Faculty** status to those persons who have demonstrated a commitment to the educational and research goals of the laboratories. Research Faculty are those researchers that are in residence at MLML, hold the Ph.D. degree, serve as PIs on grants, can be appointed as Lecturers, and are permitted to serve on student thesis committees that have the potential to set institutional policy.

**II. Application:**

Applicants should have documented evidence of achievement, professional expertise, and a continuing relationship with MLML. Applications must be supported by a sponsor from the regular MLML faculty. For Research and Adjunct Faculty, the role of the sponsor only is needed when submitting the initial application. Applications will be considered through the following recruitment procedures:

All applicants:

- Letter of application documenting their commitment to the labs, complete with CV should be submitted through a faculty sponsor.
- Seminar at MLML
- Evaluation by faculty and students.
- Faculty recommendation (via majority vote at regular faculty meeting) and Director approval.

Research and Adjunct Faculty only:

- Interview with Review Committee (with student representation).
- Seminar presentation.

Recommendation and approval shall be based on several criteria including student needs, MLML needs, regular faculty needs and area of research or interest, and available facilities/space.

### **III. Appointment:**

The appointment to Adjunct Professor, Research Affiliate, or Research Faculty indicates a contract between the individual scientist and MLML. For Research and Adjunct Faculty, the sponsor is not responsible for the fate or actions of said researchers once the appointment has been made, however, for Research Affiliates the sponsor is responsible for the fate or actions of said researchers. Each of the three categories of appointment has a primary point-of-contact within the institution that serves in the capacity of oversight and guidance. For Adjunct Professors this is the Director. For Research Faculty this is the Department Chair and/or the RTP Committee as appropriate. For Research Affiliates it is their sponsor. The Director or appropriate person will prepare an appointment letter that specifies the privileges and responsibilities of the position.

The Director may call for a full review at any time. On-site appointments (Research Affiliate and Research Faculty) are subject to evaluation a minimum of every 3 years; reappointment is contingent upon the evaluation. Evaluations may occur more often depending upon the nature of the funding source and the requirements of jointly held appointments through SJSURF.

The appointment to Adjunct Professor, Research Affiliate, or Research Faculty is an unpaid position.

These titles, once formally granted, may be used as professional identification to indicate an affiliation with MLML.

### **IV. Privileges (Appendix 1):**

Research Affiliates may:

1. Submit proposals as co-P.I. (P.I. status may be approved on a case by case basis by the Director).
2. Use MLML facilities as formally granted by the Director in consultation with the Chair.
3. Be actively involved in graduate student education through
  - a. service on thesis committees as third or outside committee member and
  - b. provision of research opportunities for MLML graduate students.
4. Be included in MLML and University brochures, reports and publications.
5. Occupy office space as available, at the discretion of the Director in consultation with the Space Committee. If additional space is needed, the adjunct will make a request

through the space committee. With faculty approval, and if available, additional space may be allocated with Director approval.

Research Faculty at MLML are entitled to the above privileges *with the addition of*:

1. Submit proposals as P.I.
2. Use MLML facilities (library access, email, phone, fax, copy machine, administrative and facilities support as well as use of our vessels, vehicles and dive program) and consortium libraries consistent with privileges afforded tenure and tenure-track faculty in this regard.
3. Be actively involved in graduate student education additionally through
  - a. participation in student advisement and admissions evaluations,
  - b. service on thesis committees as “primary” advisor (see latest version of MLML Student Handbook for the role and requirements of the Adjunct in Advising and Serving on Student Theses Committees), and
  - c. teaching (note that appointments as a Lecturer are dependent upon available funding, and at the discretion of the Director). Potential courses to be taught must be proposed to the Curriculum Committee according to the latest Course Proposal Guidelines.
4. Serve on MLML Faculty Committees that have the potential to set institutional policy. Research Faculty may not vote on matters limited to regular faculty as established by SJSU policy.

Privileges of Adjunct Faculty are granted at the discretion of the Director on a case-by-case basis.

#### **V. Reappointment:**

Adjunct Faculty: The Director of MLML, in consultation with the MLML faculty, will be responsible for assessing and reappointing at three-year intervals.

Research Affiliates: The Director and Department Chair of MLML, in consultation with the MLML faculty and sponsor, will be responsible for assessing and reappointing at three-year intervals. However, note that SJSURF requires annual evaluation of Affiliated Programs.

Research Faculty: MLML's RTP Committee will be responsible for evaluating every three years based upon the requirements laid out in section VI. The MLML RTP Committee's evaluation will be given to the Director who will then decide on reappointment

#### **VI. Evaluation:**

The submitted material should include:

1. Current Curriculum Vitae
2. Brief Statement of activities related to MLML

The statement of activities (~2 pages) should provide comments on current research/academic projects, including funding and project timelines. Information may also include reference to:

1. MLML faculty involvement
2. Employment of MLML staff/students
3. Teaching/advising activities
4. Affiliations with other institutions
5. Location of office/research operations
6. Anticipated future plans

It is realized that not all of the above may be applicable. Research Faculty members are encouraged to keep statements of activities brief, highlighting personal research efforts, and interactions/service within the MLML community. The length of the report is intentionally short to prevent this process from being onerous for the Research Faculty member. Evaluations will be completed within two months of submittal.

**APPENDIX 1. EXPECTATIONS, QUALIFICATION AND RIGHTS OF ADJUNCT FACULTY, RESEARCH AFFILIATE, AND RESEARCH FACULTY**

	<b>Research Faculty</b>	<b>Adjunct Faculty</b>	<b>Research Affiliate</b>
<b>PhD required</b>	Yes	Yes	No
<b>Formal Interview</b>	Yes	No	No
<b>3 yr Review Process</b>	RTP	Director	Director and Chair
<b>Oversight</b>	Chair	Director	Director
<b>In-Residence</b>	Yes	No	Yes
<b>Space Granted By</b>	Space Committee	N/A	Space Committee
<b>PI on Grants</b>	Yes	No	No <sup>2</sup>
<b>Service on Thesis Committee</b>	Yes <sup>3</sup> , as “primary”	Yes, 3 <sup>rd</sup> or “outside” member	Yes, 3 <sup>rd</sup> or “outside” member
<b>Service on MLML Cmtes that may set institutional policy</b>	Yes	No	No
<b>Sponsorship needed</b>	Only when applying	Only when applying	Yes
<b>Teach (Lecturer Appt)</b>	Yes <sup>4</sup>	No <sup>2,4</sup>	No

<sup>1</sup> Note that annual reviews are required by SJSURF, and conducted by the Director, for Affiliated Programs

<sup>2</sup> Special exceptions may be granted by the Director

<sup>3</sup> See latest version of MLML Student Handbook for complete description of the formal role of the Research Faculty in this sense.

<sup>4</sup> See latest version of MLML Course Proposal Guidelines for details on how to submit a potential course. Appointments are contingent upon course approval by the Curriculum Committee, financial resources, and approval by the Director

**APPENDIX 2. RESEARCH FACULTY, ADJUNCTS, & AFFILIATES @ MLML**

**Research Faculty**

<u>Name</u>	<u>Appointment Date</u>
1. Bartl, Simona	2001
2. Breaker, Larry	2005?
3. Ebert, David	2003
4. Kim, Stacy	1999
5. Loeb, Valerie	1992
6. Oliver, John	1990
7. Smith, Jason	2004
8. Starr, Richard	2002
9. Steller, Diana	2004
10. Stimpert, Alison	2015

**Adjunct (Non-Resident) Faculty**

<u>Name</u>	<u>Appointment Date</u>
1. Barry, Jim	1994
2. Brown, Tom	2004
3. Garrison, Bob	1996
4. Robison, Bruce	1994

**Research Affiliates**

<u>Name</u>	<u>Appointment Date</u>
1. Benson, Scott	2002
2. Bizzarro, Joe	2015
3. Clark, Ross	2007
5. Collins, Curt	2014
5. Fairey, Rusty	2000
6. Heim, Wes	2012
7. Null, Kim	2015
8. Stephenson, Mark	1995
9. Yarborough, Mark	2007
10. Zeligs, Jennifer	2002



**Post-Docs**

Name	Appointment Date	Sponsor
------	------------------	---------

**Technicians**

Name	Appointment Date	Sponsor
------	------------------	---------

1. Campbell, Tracy	2013	Geller
2. Adelaars, Jason	2014	Director

## Appendix 6

### MLML Conditional Authorization EO 1103

April 25, 2016

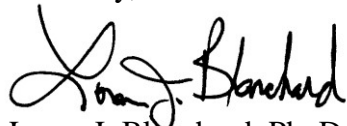
Dr. Susan W. Martin  
Interim President  
San José State University  
One Washington Square  
San José, CA 95192-0002

Dear President Martin,

On behalf of Chancellor White, I am pleased to approve your request for an extension in the deadline to submit a revised strategic plan for approval of the Moss Landing Marine Laboratories (MLML) under EO 1103.

We acknowledge the need for extended dialogue on your campus and with the Chancellor's Office to develop a robust and enduring 5-year strategic plan and note your intent to submit the required materials by June 30, 2017. Accordingly, MLML is authorized under EO 1103 to continue operations as a conditionally approved facility until July 31, 2017. We look forward to hearing from you in due course.

Sincerely,



Loren J. Blanchard, Ph. D.  
Executive Vice Chancellor

c: Timothy P. White, Chancellor,  
A.Z. Mason, Interim Assistant Vice Chancellor for Research  
Andrew H. Feinstein, Provost, San José State University  
James T. Harvey, Director, MLML

**CSU Campuses**

Bakersfield  
Channel Islands  
Chico  
Dominguez Hills  
East Bay

Fresno  
Fullerton  
Humboldt  
Long Beach  
Los Angeles  
Maritime Academy

Monterey Bay  
Northridge  
Pomona  
Sacramento  
San Bernardino  
San Diego

San Francisco  
San José  
San Luis Obispo  
San Marcos  
Sonoma  
Stanislaus

# THE CALIFORNIA STATE UNIVERSITY

## BYLAWS OF THE MOSS LANDING MARINE LABORATORIES

### CONSORTIUM

Proposed additions/changes to the MLML By Laws are highlighted in yellow Inputs from JH, ML, JL, MP – last edits Nov 29~~46~~, 2016.

#### ARTICLE I - NAME AND MISSION

1. This Consortium-operated marine science facility shall be known as Moss Landing Marine Laboratories (MLML).

2. In early 1965, three California State Colleges (now named San Jose State University, San Francisco State University, and California State University East Bay) initiated a cooperative effort to purchase property for a new marine laboratory. In 1967, Moss Landing Marine Laboratories was dedicated, after two additional ~~members of the~~ CSU campuses (Fresno and Sacramento) were added to the consortium. The purpose of the consortium was to develop capabilities in the following specific areas: (1) educational ~~function~~ (curricula in biological and physical marine sciences), (2) research ~~function~~, and (3) public service ~~function~~. MLML was to develop and offer courses for students of the consortium campuses. Since those original five campuses formed the consortium, California State University Stanislaus joined in 1972 and CSU Monterey Bay in 1996.

3. The mission of Moss Landing Marine Laboratories (referred to below as MLML) is to provide a center for teaching and research in Marine Sciences for students of the consortium campuses, with emphasis on graduate education, in the furtherance of the goals and functions of higher education. MLML is a part of the California State

University and, as a functional extension of each of the participating campuses, therefore shares responsibility for the accomplishment of the CSU mission.

## ARTICLE II - MEMBERSHIP

1. The MLML Consortium membership includes the following campuses of the California State University: East Bay, Fresno, ~~Hayward~~, Monterey Bay, Sacramento, San Francisco, San Jose, and Stanislaus. The purpose of the MLML Consortium is to actively support excellence in marine science research and education at MLML.

2. Any campus of the California State University is eligible for membership in the Consortium. Upon written application to the MLML Governing Board, a campus becomes a member of the Consortium when that application is approved by the Governing Board and Presidents of the member campuses.

3. In special cases, the MLML Governing Board may also recommend to the Consortium Presidents formal affiliations, via Memoranda of Understanding (MOU), with institutions outside the CSU for the purpose of promoting the mission of MLML. Examples may include PhD granting universities, research institutions, or other non-commercial collaborative groups, government agencies, or consortia with shared goals and purposes. The Director of the MLML will be responsible for drafting and signing such Memoranda of Understanding using language and terms consistent with the norms and requirements of the Operating Institution. If there is a financial impact of non-CSU affiliations, the Director of MLML will consult with the President of the Operating Institution in developing the MOU.

4. For administrative purposes, one of the member campuses shall be designated by the

Chancellor as the Operating Institution of MLML for the Consortium. MLML shall be considered an “equivalent administrative unit”, as stated in the current CFA contract, with regard to faculty.

5. A ~~consortium~~-member campus may withdraw from the consortium by submitting a letter of withdrawal from the President of that institution to the MLML Governing Board. This letter will detail the academic governance process by which this withdrawal was decided, i.e. the relevant documentation from the member’s Academic Senate, and provide summary details concerning the number of its students currently enrolled in the M.S. program along with any outstanding obligations to the MLML<sup>[Office1]</sup>. The Governing Board will discuss this request at its subsequent scheduled (or additional) meeting and, if satisfied that the documentation is in order, will accept the withdrawal and inform the Presidents of the remaining member institutions of the withdrawal within two weeks of this meeting. If additional documentation is required, the Governing Board will instruct the Chair to obtain and review that documentation according to its instructions and report back to the Board if the conditions for withdrawal have been met and can thus be accepted. The withdrawal will take effect at the end of the academic year in which the request for withdrawal is accepted by the Board (e.g. 2018-19). Upon withdrawal from the consortium, the M.S. degree in marine science will no longer be available at the withdrawing campus<sup>[Office2]</sup> beginning the year after the withdrawal takes effect (e.g. 2019-20). MLML and the withdrawing campus will make the appropriate arrangements for the completion of the M.S. degree for students from the withdrawing institution who have not yet completed their degree. Henceforth, no new students from that withdrawing campus will be accepted into the M.S. program. Continuing students will be offered the same rights and privileges on the withdrawing



campus as received by students whose degree program has been discontinued, as determined by the withdrawing campus' Academic Senate procedures.

### ARTICLE III - GOVERNING BOARD AND OFFICERS

1. The Governing Board has the primary responsibility for accomplishing the purpose (Article I, 2. above) of the Consortium. The Governing Board of the MLML Consortium functions as an advisory and approval body relative to academic and administrative matters of the MLML, and a supporting and implementation body in matters concerning relationships and policies among the MLML, Consortium campuses and the California State University.

2. The ~~P~~presidents of the member campuses shall each appoint two regular members representatives and an appropriate number of alternates to serve on the MLML Governing Board. One shall be a scientist-faculty member with interests and expertise in marine science, and the other shall be an administrator in a capacity relevant to the functions and purpose of the MLML. In the case of the Operating Institution, faculty representatives shall not be from the MLML, and the administrator shall be the Academic Officer to whom the MLML Director reports on matters pertaining to the MLML. The President of the Operating Institution shall also appoint a representative member from the Research Foundation at the Operating Institution (note that where multiple foundations exist, the President shall select the appropriate one or its equivalent). Each academic year, each of the appointees of the member campuses shall have specified alternates, chosen by the Presidents with the same stipulation as to occupation. The names, contact details, and appointment periods of these regular and alternate representatives shall be provided to the Governing Board Chair at the start of each academic year and will be the basis for communicating meeting details and outcomes to the Consortium campuses and for

determining voting privileges and quorum numbers. Under special circumstances where regular representatives or their appointed alternatives are unavailable, temporary alternates may be appointed for specific meetings and be granted voting rights for that member campus if so communicated in writing at or before the meeting to the Governing Board Chair by the President or her/his designee.

3. The participating institutions appointing ~~members-representatives~~ to the Board shall make the appointments of regulars and alternates for terms of three years, renewable, to encourage continuity and stability. Any changes to these appointments must be sent in writing to the Governing Board Chair by the participating institution prior to or before the subsequent meeting at which these representatives or alternates will be present.

4. Alternate ~~members-representatives~~ are permitted and encouraged to attend any meeting of the Board and to be heard, but may vote only in the absence of the regular members-representatives to whom they are alternates.

5. To provide a broader perspective, the Governing Board shall also include one member with expertise in marine science who is not affiliated with the CSU. This member will be nominated by the MLML faculty and approved by the Board of Governors.

6. The Director of Moss Landing Marine Laboratories shall be a member of the Governing Board ex officio.

7. The regular faculty at MLML shall elect two MLML faculty members to serve on the Board. These members shall not participate directly in Board deliberations on MLML confidential personnel matters. Under special circumstances, alternates may be elected

by the MLML faculty for specific meetings and this shall be communicated to the Chair in writing at or prior to each Governing Board meeting.

8. The Associated Students of MLML shall elect a student member to serve on the Board. This member shall not participate directly in Board deliberations on MLML confidential personnel matters. Under special circumstances, an alternate may be elected by the Students and this shall be communicated to the Chair in writing at or prior to each Governing Board meeting.

9. The voting membership and the quorum of the Consortium will be as follows (to be amended should the number of Consortium members change as per these By-Laws):

Consortium Representatives (2 per campus) = 14

Operating Institution Foundation Representative = 1

Non CSU Representative = 1

MLML Director = 1

MLML Faculty Representatives = 2

MLML Associated Students Representative = 1

Total Voting Members = 20

Regular Quorum = 11

Confidential Personnel Matter Quorum = 9

109. The MLML Governing Board shall have a Chair who shall be selected at a sSpring meeting of the Board to serve a term of two years which begins at the conclusion of that meeting and ends at the conclusion of the sSpring meeting two years later. The Chair of

the Board shall be elected by a majority vote of the Board. The Governing Board shall have a Vice-Chair who is elected at the same time for the same term as the Chair. The Director of MLML shall serve as Executive Secretary of the Board. As such she/he will, in consultation with the Chair of the Board, be responsible for the preparation of the agenda and the publishing of minutes and formal notices of meetings. The Chair of the Board shall forward to the Consortium Presidents the minutes of all Board meetings and, in a cover memorandum, shall call their attention to items (e.g., resolutions) of particular interest.

#### ARTICLE IV - MEETINGS

1. Meetings of the MLML Governing Board shall be called by the Chair. There will be at least one meeting of the Board per academic year, which shall ordinarily take place in the spring semester. At the annual spring meeting, the Board may choose to call an additional meeting for the following fall semester. In preparation for the annual meeting, the Chair shall ascertain ~~from each Consortium member President~~ the [Office3] current Board membership. Additional meetings of the Board shall be convened within 60 days following a request by representatives of two or more participating campuses or by the Executive Committee.

2. Each spring, at the annual meeting of the Board, the Director of MLML shall give a report on the state of the Laboratories. This report will include a summary of the MLML budget.

3. A simple majority of the voting members of the Board shall constitute a quorum (or in the case of confidential matters, a simple majority of the voting members excluding the MLML faculty and student representatives). In the event a meeting is not attended by a

quorum, the members attending may resolve themselves into a committee to consider the agenda of the meeting for later referral and comment to the Board as a whole.

4. Governing Board resolutions requiring the attention of the Chancellor's Office of the California State University shall be forwarded by the Chair via the President of the Operating Institution.

5. A collection of all significant resolutions of the Board shall be maintained by the ~~E~~xecutive ~~S~~ecretary and shall be distributed periodically to the Board.

6. Robert's Rules of Order will apply in all Board meeting matters not addressed above.

## ARTICLE V - COMMITTEES

1. The Chair of the Board, with the concurrence of the Executive Committee, shall appoint all committee members and may designate the Chairs with the exception of the Executive Committee (membership specified-below).

2. The Executive Committee of the Governing Board shall consist of the Chair, Vice-Chair, the immediate past Chair, the Director of MLML, and the Academic Officer of the Operating Institution to whom the Director reports. The Chair of the Governing Board shall be the Chair of this Committee. The Executive Committee is empowered to set interim policy as required. Actions of the Executive Committee may be undertaken through polling of its members. All actions of the Executive Committee shall be reported to and be subject to review by the whole Board at the next Board meeting. The Executive Committee will meet during the Governing Board Meetings, and will meet in the fall (usually October).

3. There shall be a Nominating Committee, responsible for providing at least one nominee for each elective office and ensuring that each such nominee agrees to accept the office if elected.

4. There shall be a Curriculum Committee, responsible for establishing and reviewing courses and course programs with appropriate consultation with home campuses. The Curriculum Committee will have at least one representative from each consortium institution and two representatives from the faculty or administration at Moss Landing Marine Laboratories.

5. Such other committees as may be desirable may be created by action of the Chair of the Board or the Board.

## ARTICLE VI - RULES OF OPERATION OF THE MLML

1. Rules of Operation of the MLML, adopted by the Governing Board in conformity with these bylaws, shall be maintained by the Board in a separate document.

## ARTICLE VII- AMENDMENTS TO THE BYLAWS

1. The Bylaws of the MLML Governing Board may be amended after the introduction of an amendment to the Board as a whole and its subsequent referral for consideration and recommendation by the Executive Committee. Upon its acceptance by a majority of the entire membership of the Board, the amendment is adopted.

## ARTICLE VIII - MLML STUDENT ORGANIZATION

1. The organization known as "The Associated Students of Moss Landing Marine



Laboratories" shall be the recognized political and social representative of the students attending Moss Landing Marine Laboratories. This organization is recognized on a level equal to that of the Associated Students organizations at all of the Consortium campuses. A current copy of the organization's constitution shall be kept on file in the Office of the Director of MLML.

2. Student fees paid to the Associated Student Organizations at students' home campuses shall be returned to the Associated Students of MLML for use in supporting MLML student body activities.

## ARTICLE IX - ADMINISTRATIVE ECONOMY

1. To avoid multiple and potentially conflicting administrative requirements, Consortium Campuses shall adopt administrative policies developed by MLML and approved by the Governing Board. Such administrative policy may include animal care protocols, degree programs, curriculum, admission and graduation requirements, safety protocols (e.g. state vehicles, small boats, research diving, chemical safety, etc.), insurance and liability, and other policy matters where the requirements at the Consortium Campuses may differ.

## ARTICLE X – SUSPENSION OR DISSOLUTION

1. Suspension or dissolution of MLML can be called for by either the Chancellor or the Governing Board[Office4]. ~~One fiscal year's advance notice will be given to MLML and its Operating Institution/SJSU in the event that suspension or dissolution of MLML is called for by the Chancellor. The process of temporary suspension is not intended as a 'de facto' dissolution but rather as a temporary procedure before a final decision is made. Temporary suspension is appropriate~~

when it is clear to the Chancellor or Governing Board that a) significant concerns exist that prevent effective operation of MLML at the present time and b) there are reasonable grounds to believe that these concerns can be rectified within the proposed period of suspension. The decision to suspend MLML must specify the period for which it will be suspended (not to exceed three years) and a timetable, procedure and criteria for revoking the suspension or for continuing on to effect its dissolution.

2. A decision to suspend or dissolve MLML by the Governing Board must involve a consultative process and agreement between the campus membership and other stakeholders in support of such action and ~~requires the concurrence of the~~must also involve the President of the Operating Institution. Any ~~such~~ recommendation ~~in favor of or against suspending or dissolving~~in favor of or against suspending or dissolving MLML must be justified, made in writing, and submitted to the Chancellor ~~and to~~by the President of the Operating Institution ~~by the Chair of the Governing Board~~. The President of the Operating Institution shall submit documentation in favor of or against the Governing Board's recommendation. The Chancellor ~~must accept this~~will decide whether to accept the recommendation and for the suspension or dissolution to come into effect.

3. Within one month of the notification of suspension ~~from the Chancellor's Office~~, the Chair of the Governing Board, assisted by the Director of MLML, will present a suspension plan to the President of the Operating Institution and the Assistant Vice Chancellor of Research, including a detailed justification for the temporary continuance of activities and the required funding necessary to meet outstanding obligations and to ensure a controlled reduction in MLML activity during suspension. The suspension plan must include provisions through which students enrolled in or admitted to the M.S. program who have not yet finished their

studies, including completion of graduate research projects or thesis credits, may continue on to graduation at their home campus. The suspension plan must detail the changes that would be necessary in order to resume the MLML program and operations and how those changes will be accomplished in the proposed period of suspension (a list of activities, personnel responsible, budgetary implications, and completion dates/timetable for implementation). A notice will be presented in the online catalog and/or printed catalogs of the Consortium members and the MLML a notice will be presented that the M.S. program is under temporary suspension, is not currently accepting new students, and the date of plans to resume the MLML program and operations, contingent on approval by the Governing Board. The notice will include an appropriate MLML contact for further information about the suspended program. No new students will be admitted to ~~the any~~ MLML-M.S. ~~p-[AF5]p~~ programs and no degrees will be granted from the program unless the recipient was enrolled in or admitted to ~~in~~ the program at the time of the suspension. For resumption of the program, as specified by the timetable in the suspension plan, the Director of the MLML must present a resumption proposal to the President of the Operating Institution, Assistant Vice Chancellor of Research, and to the Governing Board explaining how all the elements of the temporary suspension plan have been addressed, what actions have been taken to allow for the resumption of the MLML program and operations, and the steps required for the effective ~~resumption~~ [Office6]. The resumption proposal must be approved by the Governing Board and the President of the Operating Institution for the resumption to take place. The Chancellor must also approve the resumption proposal for the suspension to be revoked. If, at the end of three years in temporary suspension, no viable proposal for resumption has been received by the Governing Board or if the resumption proposal is not approved by the

Governing Board, President of the Operating Institution or the Chancellor, dissolution proceedings will be initiated.

3.4. Within one month of the notification of ~~or~~ dissolution, the Chair of the Governing Board, assisted by the Director of MLML, will present a separation plan to the President of the Operating Institution and the Assistant Vice Chancellor of Research, including a detailed justification for the temporary continuance of activities and the required funding necessary to meet outstanding obligations to ensure a controlled reduction in MLML activity towards ~~suspension or~~ dissolution. The separation plan must include provisions through which students enrolled in or admitted to the M.S. program who have not yet finished their studies, including completion of graduate research projects or thesis credits, may continue on to graduation at their home campus. The separation plan will detail how the assets and appurtenances of the MLML will be managed and dispersed. Consideration of reactivation of MLML following dissolution will require the submission of a new authorization proposal under Executive Order 1103 - Systemwide Multi-campus Centers, Institutes and Affinity Groups.

# Moss Landing Marine Labs

## Five Goals

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*We are tied to the ocean. And when we go back to the sea, whether it is to sail or to watch, we are going back from whence we came.*

John F. Kennedy

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November 8, 2016

**T**his document outlines a funding and business development strategy for the preeminent marine science asset of the CSU system, Moss Landing Marine Labs (MLML), a department within the College of Science, SJSU. While all campus units and programs aspire toward an endowment for financial stability, the MLML proposed strategy identifies entrepreneurial ventures to scale up the Lab's core infrastructure. This plan will generate revenues from multiple sources – public and private – increasing the viability of fundraising at all levels, including an endowment. Such an expansion would lend itself to a stronger, recognizable brand throughout the state and nation, thereby garnering larger philanthropic investment, earned income, expanded research, new ventures and business partnerships.

With partners at the CSU/UC and state levels, federal agencies and philanthropic investors, we hope that this vision resonates to the level of lasting recognition and strategic action. The realization of the academic, financial, and collective impact that the Lab could have on students, faculty, research – and main campus – as well as the CSU system and State of California, will engender residual benefits and investment to SJSU as a whole.

This venture will create models of excellence worth emulating; a recognition of SJSU as a world-class leader in scholarship, teaching and research; and the creation of many partnerships, whose social and global benefit to food systems, environment justice, and student success will echo well into the 21st century.

### **Five Goals**

- I) Restructure MLML** as a stand-alone college or independent institute within the SJSU/CSU governance
- II) Establish a Joint PhD Program** in Marine Science and Oceanography with UC Santa Cruz
- III) Expand the new Aquaculture Center** with equipment and industry partnerships
- IV) Purchase a new Research Vessel** with Scripps Institute of Oceanography – UCSD
- V) Initiate an Academic Village strategy**, an 8-acre housing, conference, and learning center at MLML.

Each goal is outlined below in one-page summaries. For more details, please see ***The Case for Moss Landing Marine Labs***, a full strategic plan.

## Goal I

### Restructuring MLML as a stand-alone College or independent Institute

#### Summary

The current CoS reporting model is inefficient and ineffective. There is minimal connection between the College of Science and MLML, and the fundamental standards for class size and funding allocations are outdated. Because MLML is predominantly a graduate program and is physically and figuratively miles from the SJSU campus, it would function more optimally as its own college or institute. Like Scripps, it could also be a stand-alone Institute within the SJSU governance structure. All faculty are in favor of this change, and it would parallel other strategic plans, including the proposed joint PhD with UCSC. An independent governing structure would also serve the 7-campus CSU consortium more effectively.

#### Stakeholders

- Director, faculty and staff at MLML
- Dean, College of Science
- Provost and President
- External Stakeholders – consortia campuses, UCSD, UCSC, NSF, NOAA, NASA

#### Cost / Financial Implications

TBD: The current costs as a department are almost commensurate with the cost of a college. The change in status would establish a positive shift in perception by public and private funders. Because the CoS receives no financial benefit from the Lab (ie, Indirect Cost), a reporting structure to the Provost or AVP for Research would be ideal.

#### Social Implications

This change would provide a long overdue sense of autonomy to the Lab, one that would inspire and motivate faculty and students. It would also alleviate current stressors on the college of science administratively; ironically, a more robust academic and scholarly dynamic would emerge.

#### Timeline

The proposed shift in governance structure should take no less than one year.

#### Outcomes & Benefits

A shift in identity will benefit faculty and students, as well as prospective students. An anticipated increase in enrollment would have financial benefits. Other benefits include residual research and philanthropic investment, especially in tandem with other goals: research vessel, joint PhD program.

#### Evaluation & Metrics

The College of Marine Science and Oceanography would be evaluated under the same guidelines as campus colleges. The dean would report to the Provost and be responsible for the college financial and academic planning and reporting. Because MLML has traditionally been one of the key research revenue drivers on campus, we propose including research and philanthropic investment as variables in the college evaluation.



## **Goal II**

### **Establish a Joint PhD Program in Marine Science and Oceanography with UC Santa Cruz**

#### **Summary**

UCSC approached MLML a few years back with this joint PhD idea. It is imperative that UCSC sustain a minimum enrollment threshold in their graduate program. Creating a joint program would ensure a steady stream of MLML master's students transfer into the PhD program. Further, it would provide incentive for MLML students to complete their PhD in less time than normal. Faculty agree that pursuing this collaboration would benefit the Lab and long-term outcomes; and the collaboration would definitely generate more research funding.

#### **Stakeholders**

- Director, faculty, staff, and students at MLML
- SJSU Dean, College of Science – Michael Parrish
- UCSC Dean Paul Koch (physical and biological sciences)
- SJSU Provost and President
- External Stakeholders – consortia campuses,

#### **Cost / Financial Implications**

TBD: The current costs as a department are almost commensurate with the cost of a college. The change in status would establish a positive shift in perception by public and private funders. A modest, annual investment in the PhD program from SJSU would further enhance the collaborative model (~ \$100,000 – SJSU scholarships, ship time, materials & supplies, small equipment)

#### **Social Implications**

A joint PhD program would perpetuate the Lab into a research facility on par with the leading Marine Science centers in the US. It would send a signal to research funders (NSF, NOAA, NASA) that SJSU take research increasingly more seriously and has provided the necessary infrastructure to absorb broader research undertakings. A similar new brand identity will permeate the state and nation, in terms of corporate and nonprofit partnerships, joint programming, and custom research ventures.

#### **Timeline**

The proposed joint PhD program should take approximately 18 months to enroll the first cohort.

#### **Outcomes & Benefits**

The PhD program will increase enrollment to the master's and likely undergraduate programs. It will add one more PhD program to the existing three doctoral programs at SJSU, substantiating increased research and funding at all levels. The Lab will become a more prominent resource for research and related environmental impacts on the Central Coast.

#### **Evaluation & Metrics**

Evaluation of the program will occur in cooperation with UC Santa Cruz, based on their existing metrics. For SJSU, common data sets will include student enrollment, graduation rates, research funding, and related philanthropic investments. Longitudinal evaluation will include job and teaching placements, policy reforms, and research outcomes.

### **Goal III**

#### **Expand the new Aquaculture Center with equipment and industry partnerships**

##### **Summary**

Raising fish in captivity for food is a multibillion dollar business, with enormous growth potential in the US (< 6% of the global market). With residual funds from the Packard Foundation (~ \$700K) and MLML funds, the Lab built a 1,200 ft<sup>2</sup> Aquaculture structure in 2014. We must now raise approximately \$800K for the necessary equipment and instruments needed to solicit custom research from industry and governmental stakeholders. Aquaculture is an ever-increasing field of study, research platform, and potential revenue generator.

##### **Stakeholders**

- Director, key faculty – Mike Graham, Scott Hamilton – staff, and students at MLML
- External Stakeholders – industry partnerships, policy makers, consortia campuses
- NOAA (National Oceanic and Atmospheric Administration)
- NSF (National Science Foundation)
- Asian Markets, countries, and universities

##### **Cost / Financial Implications**

\$800,000 would provide sufficient seed funding to equip the newly-constructed building in the town of Moss Landing. Industry contracts and increased research would provide annual revenue streams.

##### **Social Implications**

Establishing MLML as a go-to resource for Aquaculture research and testing would send a signal to regional, state, national, and international stakeholders. There are few Aquaculture centers in the nation and none in this area, this new scientific offering would expand the field of research while developing increased recognition and investment in MLML in this vital food economy.

##### **Timeline**

The Aquaculture structure is complete, additional programming after adding equipment would be immediate. Currently, the Lab is working with Monterey Abalone and has a few modest projects in the pipeline.

##### **Outcomes & Benefits**

An immediate benefit to completing the Aquaculture facility are industry partnerships, which will generate revenues. Establishing MLML as a center of excellence and expertise around Aquaculture is one more variable that will inform the joint PhD program above, as well as an increasingly vital field of study for students.

##### **Evaluation & Metrics**

Evaluation of the Aquaculture Center will center around independent and collaborative research projects; as well as funded research projects (NOAA, NSF), and related philanthropic investment. Additional partnerships and collaborations will also be tracked as a means of qualitative evaluation; these include students trained and placed within the Aquaculture industry.

## Goal IV

### Purchase a new Research Vessel with Scripps Institute of Oceanography – UCSD

#### Summary

Scripps Institute of Oceanography (SIO) approached MLML with this joint purchase idea. Their new research vessel, the Sally Ride is 238 feet and costs \$40,000/day to operate. Scripps needs a smaller, more nimble research vessel for smaller projects. MLML lost its research vessel (Point Sur) two years ago, after 30 years, part of a mandatory retirement from NSF. Any Marine Science facility worthy of serious research necessarily needs a research vessel to study the oceans. This venture would include Scripps, SJSU/CSU, and the State of CA, sharing the cost.

#### Stakeholders

- Director, key faculty, staff (Mike Prince), and students at MLML
- President and Provost / SJSU Research Foundation / University Advancement
- UCSD: Scripps - Oceanography Director Margaret Leinen; Associate Director, Bruce Appelgate
- State of CA
- UNOLS (University National Oceanographic Laboratory System)
- NSF (National Science Foundation)
- Multiple universities and state agencies

#### Cost / Financial Implications

A 120-ft. research vessel will cost approximately \$14M. Scripps has \$2M now and would like the CSU (SJSU) to match that amount. The two universities would then appeal to the State of CA to appropriate funds for its first state-owned and university-operated research vessel. Annual revenues from leasing the ship would cover all maintenance costs; additional revenues from federal and state agencies for applied research would generate direct and indirect revenue costs.

#### Social Implications

Scripps is arguably the preeminent marine science and oceanographic research center on the West Coast. They are only rivaled by Woods Hole in Massachusetts. This association and shared vessel would catapult the research expectations of faculty and staff at MLML, as well as certain campus departments that could share research interests (biology, geology, geography, chemistry, computer science). The shared equity of this venture, along with the joint PhD program and other goals would create a shift in mindset for academic rigor and research -- which would translate among national funders and philanthropic investors. The psychological implications for owning a research vessel will assuage faculty anxiety and further affect enrollment and student success.

#### Timeline

A ship of this design takes approximately two years to build. Scripps has \$2M now and is eager to begin negotiations with MLML and SJSU immediately. Director and Vice Chancellor Margaret Leinen and others would like to come to MLML in the coming weeks to initiate discussions.

#### Outcomes & Benefits

The outcomes of a research vessel are measured in funded research, scientific papers, curricular applications, and collaborative partnerships involving the vessel. The benefit of owning a research vessel substantiates SJSU's investment in critical environmental research and academic rigor.

#### Evaluation & Metrics

MLML has a 50-year history of evaluation and metrics for ship use, ship time, research, etc.

## **Goal V**

### **Initiate an Academic Village strategy – Housing and Conference Center**

#### **Summary**

All top university marine science and oceanographic centers have housing, which MLML lacks. The most ambitious of goals, we propose to develop 8 acres of adjoining land into a comprehensive housing and conference center – an academic village. This plan has been evolving for over ten years, and all agree that housing is desperately needed to take MLML to the next level of research, enrollment, and the Lab's increasing role in the national and international landscape of marine and oceanographic research. The conference center and housing would allow for national and international conferences, summer courses and institutes, K-12 STEAM education, and increased enrollment.

#### **Stakeholders**

- Director, faculty, and students at MLML
- President and Provost / SJSU Research Foundation
- University Advancement
- Town of Moss Landing, CA
- Campus Consortia
- CSU Monterey Bay
- Monterey Bay Aquarium Research Institute (MBARI)
- Philanthropists: Packard, Moore, individuals in Monterey county

#### **Cost / Financial Implications**

The Academic Village will cost between \$10M and \$50M, depending on scope. There are opportunities for a public/private partnership, as well as significant private investment. The Village can be designed and built in phases, depending on available funding. A dedicated development officer and marketing assistance from University Advancement would accelerate this effort.

#### **Social Implications**

Like the other goals that increase the brand and research equity of the Lab, this Academic Village will establish MLML as the preeminent marine science and oceanographic center in Northern California. It will become a designation point for research dissemination, academic conferences and forums. It will send a resounding message to industry (eg., Aquaculture) and related stakeholders that MLML can compete for R1 funding, as well as corporate partnerships and custom research. The Academic Village complements all other goals by providing a place and shape to convene and make critical decisions about the planet, its people and environment.

#### **Timeline**

In all likelihood, the Academic Village will be built in phases, starting with the Conference Center. To raise funds and build the entire concept, a projected timeline of 5-7 years is realistic.

#### **Outcomes & Benefits**

The outcomes of providing housing to students is immense, it changes the dynamics of attendance and enrollment. The benefit of housing also provides for ongoing seminars, conferences, and forums on every aspect of marine science and oceanography. It will increase partnerships, collaborations, student success, and increase revenues, public and private.

#### **Evaluation & Metrics**

Assessment for the Village will correlate to all other goals, but also financial success. Common housing data sets, enrollment data, and student evaluations will inform metrics.



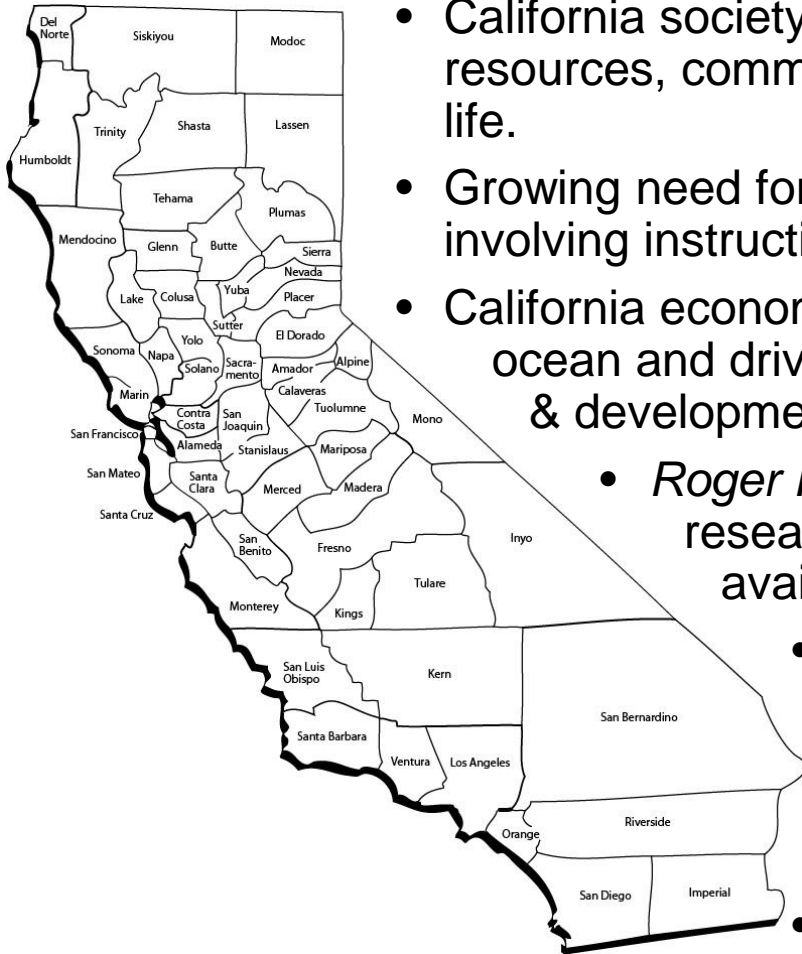
# Planning for a new California coastal research vessel

Presentation to UNOLS  
Fleet Improvement Committee  
29 November 2016

Bruce Appelgate (SIO)  
Mike Prince (MLML)



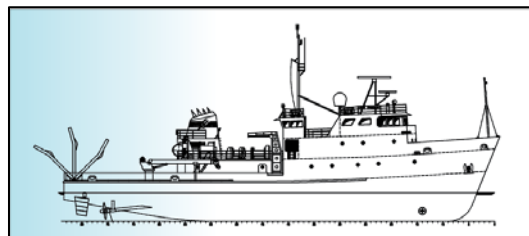
# California needs a dedicated research vessel



- California society and economy depend on the ocean for resources, commerce, defense, infrastructure, and quality of life.
- Growing need for undergraduate and graduate education involving instruction, research and practical training at sea.
- California economy, 6<sup>th</sup> largest in world, is strongly tied to the ocean and drives a growing demand for maritime research & development.
  - *Roger Revelle and Sally Ride* have worldwide research portfolios, and will not predictably be available in California waters
- Universities throughout California require an accessible, affordable, capable research vessel for classes and student research projects, operating on time frames tailored to academic calendars.
- State needs the ability to mount rapid response missions to ephemeral events, which requires quick access to a well-outfitted, staffed and capable vessel

# California-based Intermediate Class & smaller ships

Research vessels able to carry out California's local research and education needs have decreased from 3 to 1, with the last remaining ship approaching the end of its service life. A new vessel is needed.

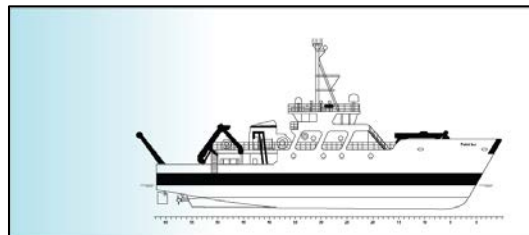


## INTERMEDIATE

R/V *New Horizon*

170 feet / 40-day endurance

12 crew / 19 scientists

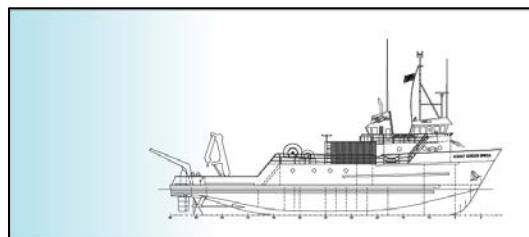


## REGIONAL

R/V *Pt Sur*

135 feet / 21-day endurance

8 crew / 12 scientists

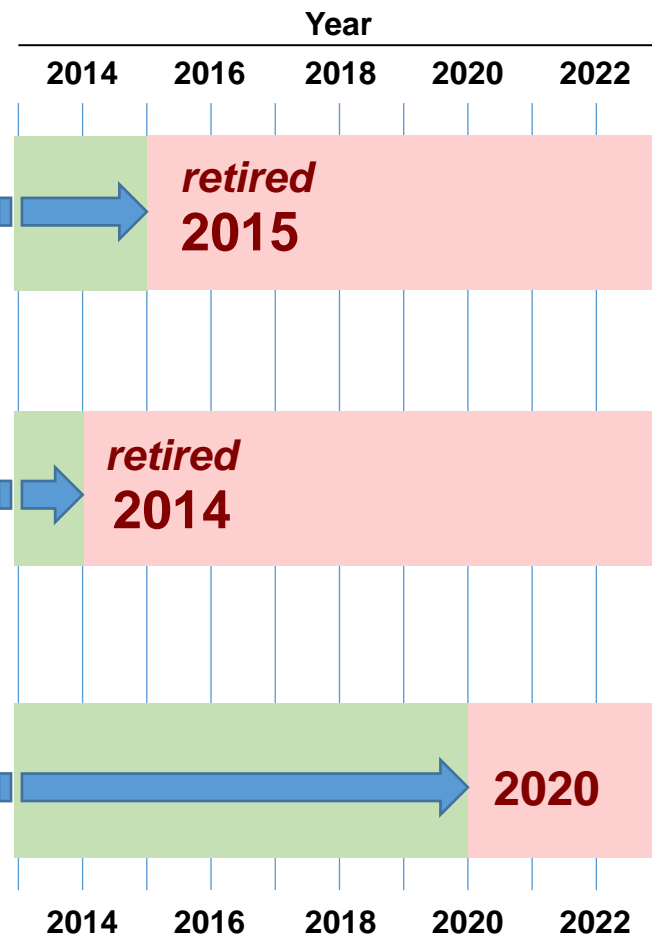


## LOCAL / COASTAL

R/V *Robert Gordon Sproul*

125 feet / 14-day endurance

5 crew / 12 scientists



***Needed  
2020 onward***



# Collaborating on a shared research vessel



**Vision:** establish a new kind of partnership within California, involving public and private universities, research institutions, state agencies and non-governmental organizations to support a new California Coastal Research Vessel for seagoing education and research.

## Efforts to date:

- **Moss Landing Marine Laboratories** (California State University) and the **Scripps Institution of Oceanography** (University of California) have partnered to spearhead this effort.
- Significant seed funding from each institution has been committed
- Potential collaborators throughout the state have expressed interest
- Discussions are underway between MLML and SIO to establish institutional agreements needed to codify our collaboration

# Goals for 2017

**Science mission requirements:** Consult with likely ship users and sponsors to develop SMRs, building on existing UNOLS products

**Develop management plan:** How will a single vessel be managed and operated such that it is able to support multiple institutions? This should be resolved in 2017.

**Conceptual vessel design:** Based on the foregoing.

## Correspondence to:

Bruce Appelgate <tba@ucsd.edu>

Mike Prince <prince@mml.calstate.edu>



# CSU-Side of this concept

## Possible CSU support:

- Construction (\$0.9 million at MLML)
- CSU support for class cruises
- Support portion of crew and staff

Moss Landing Marine Labs



## Opportunities:

- Class cruises – 40 people (supported by CSU or campus)
- Student-lead research projects (e.g. COAST funding)
- CSU P.I. projects (sponsor funded)
- CSU-wide collaborations
  1. MPA monitoring
  2. OA or other climate change issues
  3. Invasive species
  4. Assessing wind or wave energy impacts
  5. Assessing HABs
  6. Contaminants
  7. Sampling and modeling of storm activity



# A New Coastal Research Vessel for California

Dr. James T. Harvey  
Moss Landing Marine Laboratories  
(831-771-4402)  
[Harvey@mlml.calstate.edu](mailto:Harvey@mlml.calstate.edu)

## DATE

### Introduction

For nearly 30 years Moss Landing Marine Laboratories (MLML) operated the 135' Research Vessel (R/V) *Point Sur*. The National Science Foundation (NSF) owned the vessel, and MLML operated the ship within the national academic fleet of the University-National Oceanographic Laboratory System (UNOLS); it was the only UNOLS vessel in the CSU. With the recent loss of the *R/V Point Sur*, MLML/SJSU/CSU has diminished research capability, diminished capacity for class cruises and student involvement, and a lesser stature within the oceanographic community. At the same time, Scripps Institution of Oceanography (SIO) of UCSD has retired one of their smaller coastal vessels and will soon retire another; they have a similar need for a new coastal vessel. MLML and SIO (Appendix A) are proposing to operate a coastal research vessel jointly for California, a ship that would serve as an excellent platform for classes and student research projects, and for research of vital interest to California (e.g. climate change, Marine Protected Areas (MPAs), sea level rise, harmful algal blooms and changes in the California Current ecosystem). We propose to explore this partnership and acquire funding from the CSU, UC, State of California, and private interests - for the purchase, outfitting, and operations of a new state-of-the-art research vessel for California.

### Background

The *R/V Point Sur* supported research in the North Pacific and was the only UNOLS vessel managed within the California State University system. She served the research and educational needs of MLML, SJSU, and the CSU for more than 30 years. The *R/V Point Sur* had also been the chosen research vessel for many NSF, Navy, and NOAA sponsored cruises in the Pacific, thus providing a great deal of notoriety and credibility for MLML, SJSU, and the CSU in the ocean science community. Many of the ship's cruises or resulting data provided students with valuable marine science research experience. It became a real and iconic image for marine research at MLML and in the CSU system. MLML-SJSU marine operations housed and effectively managed the *R/V Point Sur*; and the SJSU Research Foundation provided fiscal oversight and sponsored programs management.

National Science Foundation (NSF) owned the *R/V Point Sur* and historically provided the base funding for ship time - often for NSF-funded research projects. The Office of Naval Research (ONR) also provided funding for ship days for ONR-sponsored research. Other users included NOAA, Stanford, and the Monterey Bay Aquarium Research Institute (MBARI), to name a few. MLML and the SJSURF developed proposal for the CSU to purchase the *Point Sur*. The proposal was sent to the President of SJSU in 2014.

Unfortunately, that proposal was not forwarded to the Chancellor's Office for consideration. Thus, MLML/SJSURF was forced to sell the vessel in 2014, but MLML was allowed to retain the funds for future marine operations that support NSF-sponsored projects. The \$875,000 sale revenues now reside in an interest-bearing account, which can be used for outfitting a vessel (not purchase) for future use.

### Strategy

The overall goal is to obtain a new coastal research vessel, thus providing the 23 CSU campuses access to a large research vessel for quality marine science education and research. In addition, we propose to partner with the UC system, specifically with UCSD and Scripps Institution of Oceanography, thus sharing the costs of purchasing, outfitting, and operating such a vessel. The purchase would help to maintain the CSU's visibility in and contributions to the marine sciences. Our vision is that such a vessel would provide the CSU students and faculty with a unique and state-of-the-art vessel for class cruises, undergraduate and graduate student training and research, and CSU-directed marine science. Additionally, the vessel would serve the same needs of the UC, and would promulgate collaborations between students and faculty from the CSU and UC.

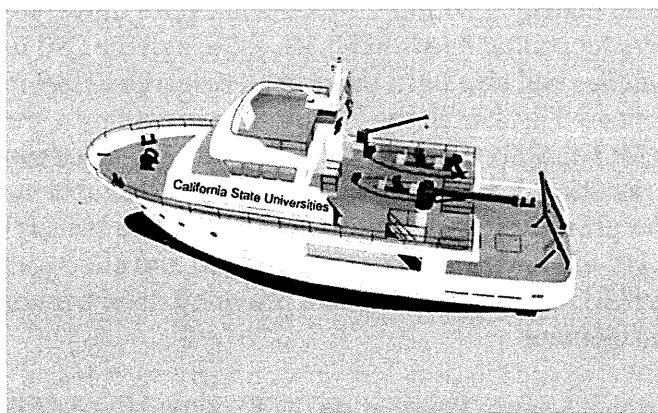
We have approximately \$2 million in commitments from UCSD and \$0.9 million from MLML (the funds remaining from the sale of the *R/V Point Sur*). The design and construction of a new 120' vessel would be about \$20 million, with the costs shared proportionally among the following stakeholders:

- SIO/UCSD/UC
- MLML/SJSU/CSU
- State General Funds
- Private Philanthropy.

The maintenance and operation expenses would also be shared, with most of these costs recovered by users based on a daily rate.

The general design features of the vessel:

- 85' to 120' vessel accommodating class cruises of 20-30 students
- Full complement of marine science capabilities equipment (e.g. A-frame, winches, sonar, underway sampling, wet/dry labs, crane).
- Endurance capability of minimum of 5-6 days, crew of 2-7.
- Range of Mexico to Hawaii to Alaska.
- Energy efficient (perhaps a zero emissions vessel).



We envision the vessel spending three months in central/northern CA (port at MLML), then three months in southern CA (port at SIO), and alternate locations. This provides the different institutions with varying seasonal ship time during different parts of the year. We would expect there might be cruises with UC students/scientists, CSU students/scientists, and some mixed collaborative cruises. We can envision that some cruise days would be specifically designed to research issues pertinent to California policymakers.

Possible annual research by the vessel of interest to the State include:

- Monitoring MPAs (marine protected areas)
- Studies of Harmful Algal Blooms
- Research on Climate change and ocean acidification
- Research and modeling of sea-level rise and storm activity
- Occurrence and effects of contaminants.

### **Rationale**

California has the 6<sup>th</sup> largest economy (\$2.46 trillion in 2015; IMF 2015) in the world, and the largest ocean economy in the U.S. (\$42.9 billion in 2000; Kildow and Colgan 2005). The environmental quality of the coast and ocean sustain these ecosystem services, yet, population growth and human activity continue to put this ocean economy at risk. We need a new cohort of scientists, policy makers and educators, trained in ocean and coastal systems, to be the leaders and researchers during a time of rapid environmental change. And we need a new state-of-the-art research vessel operated and used by the CSU and UC systems to provide educational and research opportunities, to deal with the changing oceans and coastal environments.



07 July, 2016

**Subject: Expression of interest in new California shared-use oceanographic research vessel**

Dear Colleague,

With the approval of the leadership of Scripps Institution of Oceanography (SIO) and Moss Landing Marine Laboratory (MLML), we have started a user-driven task force to formulate the needs and a path forward towards a California state-owned research vessel. This has been triggered by the loss of the Intermediate Class R/V *New Horizon* (SIO), the retirement and sale of the Regional Class R/V *Point Sur* (MLML) and the fact that the aging Coastal Class R/V *Robert Gordon Sproul* (SIO) is approaching the end of its service life.

With the impending retirement of *Sproul*, a new, capable UNOLS vessel will be needed to meet research needs that are important to the state of California. Many California institutions and universities have research requirements for work in state waters, including the University of California, the California State University, private universities, and California state agencies. We believe that a coalition and partnership of these stakeholders can make a strong case for the acquisition of a new state-of-the-art, multi-purpose, and efficient-to-operate research vessel. Our vision includes a management scheme based on shared-use and equitable access for all California collaborators. In order to move forward, we would like to assemble

1. expressions of interest from all groups in California that have a need for access to a state research vessel (size somewhere between local and regional UNOLS class), and
2. scientific requirements that such a new ship should ideally be able to satisfy.

Based on your feedback, we plan to come up with a preliminary plan and then invite broad participation from the interested institutions to reach consensus, refine the plan, and advocate for it.

From initial discussions, even though there is no full consensus, we believe a good argument can be made for a completely new ship as opposed to acquiring and converting an existing vessel. The rationale we are putting forward for this includes:

- The greatest financial challenge is less the one-time construction cost than the ongoing operating costs after acquisition. A new purpose-built ship can take advantage of custom design features, newest technology, and automation to minimize operating costs (much more than a used vessel).
- Ever stricter environmental regulations for emissions, efficiency, noise pollution, hydrocarbon spill prevention, ballast water and waste disposal can best be satisfied with a new ship that takes all regulations into account.
- Given the effort and cost, and possibly unique one-time window of opportunity to fund a new ship, we want to build a ship that is state-of-the-art now in order to last a long time going forward, as opposed to a used ship that will have a more limited life or will require earlier mid-life refits. A used ship would necessarily be a compromise, since it would begin as a vessel designed and built for a different purpose.
- We are hoping to find a design that maximizes the operating requirements that can be satisfied, while achieving an attractive operating cost. Only a cleverly custom-designed ship can satisfy these needs. New design solutions may be necessary.
- If we want the state to fund such a ship, it would help if this ship were a showcase vessel that reflects forward-looking design and technology, such that the state can be proud of it and show

it off. This is more likely the case with a completely new state-of-the-art ship.

Based on the above, we invite you and other colleagues at your institution to provide feedback on (a) and (b) above. For (b), please tell us what types of research you conduct in California waters, and some general requirements such as equipment, load capacity, berthing, lab space, endurance, etc.

**Your prompt reply would be appreciated.** At this stage we're interested in brief, broad expressions of interest from as many interested persons as possible. We will use this information to inform our next steps in our ship acquisition process. Please send your reply to:

Dr. Gabi Laske <glaske@ucsd.edu>

Dr. Bruce Appelgate <tba@ucsd.edu>

Please circulate this letter to anyone else in the State of California who you think might be interested in the type of vessel under discussion here.

Best regards,

Gabi Laske  
Bruce Appelgate  
Simone Baumann-Pickering  
Steven Constable  
Jim Harvey  
Jules Jaffe

Lisa Levin  
Mark Ohman  
Mike Prince  
Uwe Send  
Eric Terrill





## California Sea Grant Extension Seeking Aquaculture Specialist

California Sea Grant is seeking a resourceful, innovative scientist with a background in marine or estuarine aquaculture (freshwater expertise considered) and will provide research-based information and leadership in topical areas related to aquaculture husbandry, nutrition, genetics, diseases, systems design, or policy.

Reporting to the CASG Extension Director, the Aquaculture Specialist will be based at the California State University's Moss Landing Marine Laboratories (MLML); however the Specialist will be a full-time employee of Scripps Institution of Oceanography at UC San Diego.

Sea Grant Extension Specialists work individually and as part of a team of specialists distributed throughout California. The role of an Extension Specialist is to develop solutions to high-priority coastal and marine issues, and disseminate information through diverse extension methods. Extension Specialists utilize research as an outreach and education tool.

The ideal candidate must have a Ph.D. (preferred) OR a master's degree with a minimum of 3 years of post-graduate experience. Some experience with teaching at the college level is desirable.

For full details of the position and to apply, visit [caseagrants.ucsd.edu/aquaculture-job](http://caseagrants.ucsd.edu/aquaculture-job)

**Deadline to apply is January 6, 2017.**

**San José State University / Moss Landing Marine Labs**  
**Moss Landing, California**  
**ANNOUNCEMENT OF POSITION AVAILABILITY**  
**Subject to Budgetary Approval**  
**Visiting Scientist AY 2018-19**

**Full or Part-time Temporary Academic Year Visiting Position in Marine Science**

**Rank: Open**

**Qualifications:** A Ph.D. is required. Experience at one of the consortium campuses preferred. Applicants should be scientists in good standing and have research interests (to be pursued independently or in cooperation with specific faculty member) that are of overall interest to the MLML faculty and student body. In lieu of research, the applicant may propose teaching courses generally not offered at MLML but that would be of value to the MLML student body. Applicants should have awareness of and sensitivity to the educational goals of a multicultural population as might have been gained in cross-cultural study, training, teaching and other comparable experience.

**Responsibilities:** Responsibilities include ability to teach effectively and perform research in the applicant's area of expertise. Candidate will be expected to coordinate the weekly seminar series with assistance from the faculty and students. Candidate must address the needs of a student population of great diversity – in age, cultural background, ethnicity, primary language and academic preparation – through course materials, teaching strategies and advisement. Candidates should have proven record of peer-reviewed research publications.

**Salary Range:** Commensurate with qualifications and experience.

**Starting Date:** Beginning of Fall 2018 semester. Appointment may be for one semester or for one academic year.

**Eligibility:** Employment is contingent upon proof of eligibility to work in the United States.

**Application Procedures:** For full consideration send a letter of application, curriculum vitae, statement of teaching interests / philosophy and research plans, professional goals and accomplishments, and contact information for at least three references to the address below by **July 1, 2017**:

Assistant to the Director  
Moss Landing Marine Laboratories  
8272 Moss Landing Road  
Moss Landing, CA 95039

**For more information please see the [Moss Landing Marine Labs website](http://www.mlml.calstate.edu) ([www.mlml.calstate.edu](http://www.mlml.calstate.edu).)** Applicants are encouraged to contact appropriate MLML faculty members to discuss possible participation at the Labs.

MLML, located on Monterey Bay, is operated by a consortium of California State University campuses (East Bay, Fresno, Monterey Bay, Sacramento, San Francisco, San José and Stanislaus). MLML offers undergraduate courses but is primarily a graduate institution for Consortia students seeking a Masters of Science in Marine Science degree.

San José State University is an Affirmative Action/Equal Opportunity Employer. We consider qualified applicants for employment without regard to race, color, religion, national origin, age, gender, gender identity/expression, sexual orientation, genetic information, medical condition, marital status, veteran status, or disability. This policy applies to all San José State University students, faculty, and staff as well as University programs and activities. Reasonable accommodations are made for applicants with disabilities who self-disclose. Note that all San José State University employees are considered mandated reporters under the California Child Abuse and Neglect Reporting Act and are required to comply with the requirements set forth in CSU Executive Order 1083 as a condition of employment.

A background check (including a criminal records check) must be completed satisfactorily before any candidate can be offered a position with the CSU. Failure to satisfactorily complete the background check may affect the application status of applicants or continued employment of current CSU employees who apply for the position.

The latest San José State University Safety 101 Uniform Campus Crime and Security Report is available. You may request a copy of San José State University's annual safety report by contacting the University Police Department at (408) 924-2222 or by visiting the [University Police Department](http://www.sjsu.edu/police) website at (<http://www.sjsu.edu/police>.)



**MLML Governing Board Meeting  
2 December 2016**

**MINUTES**

**Governing Board Members Attendees:**

Jim Harvey (MLML, Director)  
James Lindholm (CSUMB)  
Nick Welschmeyer (MLML, Biological Oceanography)  
Manny Gabet (SJSU)  
Michael Parrish (SJSU)  
Michael Lee (CSU East Bay, Chair)  
Ron Coleman (CSU Sacramento)  
Andrew Lawson (CSUMB)  
Natalie Yingling/Michelle Haman (MLML Student Body Representative)  
Scott Hamilton (MLML)  
Patrick Kelly (Stanislaus)  
Horacio Ferriz (Stanislaus)

**Additional Attendees:**

Kathleen Donahue (MLML Asst. to Director)  
Jane Webster (MLML, SJSU State)  
Jonathan Geller (MLML)  
Brian Ackerman (MLML)  
MJ Donahue (SJSU Univ Advancement/College of Science )  
Terra Eggink (MLML Graduate Program Coord)  
Brian Sardellic (Stanislaus)  
Amy Wagner (CSU Sacramento)  
Ritin Bhaduri (Stanislaus)  
Raj Prasad (SJSU Research Foundation)



*Meeting Start: 0940*

**Minutes:** Kim Elson and Alan Dillon (MLML, Student Assistants, GEO Oce Lab)

\*\*\*\*\*

**Michael Lee:**

- Introductions
- Waiting for a quorum of 11 in order to accept minutes from last meeting and vote on a new member.

**Annual Report**

*Jim Harvey*

- New requirement for all multi-campus entities to submit annual reports; last year was first annual report for MLML
- Main feedback on report came from Zed Mason who asked for a dissolution clause in bylaws
- Current annual report is still a draft, Ver. 14 (which has been sent to the board). Since the Chancellor's Office (CO) audience for this report is new to MLML, this report is longer and has background info to educate about MLML; plus the SJSU president is new and we want to educate and impress her.
- Spring Governing Board meeting more important than fall meeting (e.g. approval of FY budget), which was added because it was hard to get through everything in just one meeting.
- Annual Report will be the primary means to report to the Governing Board during the Fall meetings from now on. For the Spring meetings, besides the budget approval, mostly highlights and updates will be reported.
- Other feedback on Annual Report: MLML needs a strategic plan (timeline included in Annual Report; due to the CO on 31 July 2017).

**Faculty/Staff Updates**

*Jim Harvey*

- Visiting Scientist 2018-2019 position is open now through July 2017
- Alison Stimpert will be visiting scientist for 2017-2018 (currently a research faculty member with the Vertebrate Ecology Lab at MLML)
  - *Question from Dean Parrish: how can she be a visiting scientist if she's already here?* If no one from a consortium campus applies, we look elsewhere. We haven't had many people from consortium campuses applying recently, which is one reason why the position is open two years in advance. *Michael Lee says he is considering putting together testimonials from previous visiting scientists for marketing the position. Suggestion from consortium member: split visiting scientist position by semester.* The \$30k that goes to the visiting scientist

currently comes from 5 of the consortium campuses. Might be time to revisit this amount.

**TASK (MLML):** Send Visiting Scientist post for AY18-19 to Gov Board members to post and distribute throughout their campuses.

**TASK (MLML):** Send link to Board Members of MLML's YouTube page where videos of the weekly seminar are posted

- Rick Starr has retired from CA Sea Grant (though will remain at MLML as a Research Faculty). We are working with Sea Grant to hire a new CA Sea Grant Extension Specialist in aquaculture (who will be paid by NOAA via Scripps, with a quarter of the salary paid by MLML so they will also teach here). The position will be located at MLML
  - *Question from consortium member about the tenure process through UCSD.*  
MLML will be involved in their evaluation. Sea Grant has had these specialists for a long time and they have the process fully worked out.
- MLML research activity has been stable for 14 years or so, but has decreased in the past couple of years. This is partially due to the loss of the Pt. Sur and a new CA rule for contracts not going to non-state employees (problem for our researches at Norte). In response, we have added six new research faculty: two from the Naval Postgraduate School, Qing Wang and Tim Stanton (since NPS no longer supports research), Iliana Ruiz-Cooley (post-doc from UCSC), Joe Bizzarro (post doc at NMFS), Colleen Durkin (who just got her first NSF proposal funded), and Kim Null (researches nutrient cycling and brought a lot of great equipment with her).
- MLML had a successful 50<sup>th</sup> Anniversary Celebration with a media event, a VIP event, and an Alumni party with almost 50% of all alumni attending. MLML is making attempts to keep in touch with alumni. About \$23,000 was raised for a 50<sup>th</sup> anniversary book that will be sold to alumni at a small cost and used for future events/marketing.

## Five Goals for MLML

*Jim Harvey*

Five Goals document distributed to members as part of meeting packet:

- Goal #1: New academic village with housing, research labs, conference center, etc.
- Goal #2: Fully develop Aquaculture Center
- Goal #3: Re-organize lab in terms of how it fits in with the CSU system
- Goal #4: Develop a joint PhD program with UCSC
- Goal #5 Replace the Pt. Sur. Scripps is also looking for new coastal research vessel so MLML is working with them to jointly fund and operate a vessel for the state of California. Working on a vessel design and management concept in 2017. MLML wants 120-130 ft vessel, \$20million+ cost (currently \$2mil from UCSC, \$0.9mil from MLML; will ask for funding from UC, CSU, State of CA, outside groups).
  - *Discussion/questions from consortium members: where will new vessel be based?*  
It will share home ports at MLML and Scripps. Need all CSU consortium presidents on board to support. *Weren't there restrictions on using the proceeds*

*from Pt. Sur to only outfit boats, not build/buy a new one?* Yes, but there is a new deadline for spending the money and after a couple of years we can have the money with no restrictions. *What would the day rate be?* Working on having a reasonable rate of \$2-3k per day for CSU participants with support from CSU. Vessel will be in UNOLS fleet, so NSF can use it (the more users, more days at sea, lower daily rate). We are looking into making it a zero emissions vessel. We also need to raise funds to repair the dock at the Del Mar property, which we bought for the Pt. Sur because MBARI wished to repossess their wharf space. *Are there no other vessels we can use?* Closest ones are OSU or Scripps (Scripps vessel will retire in 2020), but that would mean paying for a day's transit to and from for each use. Humboldt has a vessel which may be underused because of age and local, rough weather, but it doesn't fit our needs. Cal Maritime has some small boats to offer, which are not adequate, and a 500ft vessel which is too big, plus its purpose is cadet training. MBARI has a couple of vessels (Rachel Carson and Western Flyer), but they rarely rent them out since they can barely accommodate their own scientists. *Comment from inland CSUs: having an opportunity for at least one group every year to go on a class cruise would go a long way in convincing their deans this is a good investment. Question about cost of building vs buying and retrofitting.* Aiming for building- though it will really depend on the funding we can get.

**TASK (MLML):** The handout about the new vessel and Jim's slides will be provided to the Gov Board members so they can begin discussions with their campus Presidents and solicit interest from research colleagues on usage.

**Michael Lee:**

- Late members have all arrived.
- Motion to approve the faculty proposed non-CSU member of the Governing Board (President/CEO of MBARI, Dr. Chris Scholin). **Motion passed unanimously 13/0/0.**

*Break: 1100-1115*

**Jim Harvey:**

- White paper on new vessel distributed to members. Jim is collecting supporting letter for this investment; can supply a blueprint of a letter. The goal is to have an operational vessel by 2020.

**Michael Lee:**

- Motion to accept minutes from May 27<sup>th</sup> Governing Board meeting. **Motion passed.**

**Five Goals for MLML, continued**

*Jim Harvey*

- These goals will identify how MLML will achieve the Strategic Plan

- For meeting our goals, we need funding. We have support from SJSU to do so: see “The Case for MLML” document.
- We want to integrate all consortium campuses with Aquaculture Center.
- Currently on schedule with our budget.
- *Consortium member ask for clarification of what the goal to restructure MLML means.* MLML doesn’t really fit in currently as we are not on campus at SJSU and we are not a department (MLML is considered an “equivalent unit”), and we function as an extension of seven campuses. We get SJSU Research Foundation funding, our indirect costs help support administration of SJSURF but none of our indirect costs are collected by SJSU. So SJSU has to deal with our problems but with few benefits. We think it would be good to create something different than an “equivalent unit,” e.g. an institute; something with better visibility to SJSU (since we are currently a part of their College of Science). This seems a good time to pursue a new designation as the future operating institution is being discussed.

**TASK (MLML):** “The Case for MLML” full document will be provided to the Governing Board

- A general recommendation to remove the institutional restructuring from the five goals listed before, leaving four, and include this in the preamble as a general requirement for the success of the other four.

## Administrative Campus Update

*Jim Harvey*

- SJSU has always been MLML’s operating institution, but CSUMB is interested in taking that over.
- Presidents and Provosts from SJSU and CSUMB are having a meeting at MLML on January 13<sup>th</sup>, 2017 to discuss. Jim will be meeting with the SJSU President the day before. *Request from consortium members for info/decisions arising from this meeting asap. This meeting is news to most members here.*
- Some background: in 1995, there was a switch from MLML being in overall CSU budget to being within SJSU’s budget and around 2013 the MLML budget was moved under the College of Science at SJSU. About half of MLML funding is from SJSU budget.
- Action item from a prior meeting included sending a memo to Chancellor’s Office to get a clarification of the process for potential change of administrative campus and to consider allowing the MLML Gov Board to have input in the decision. Memo was sent by James Lindholm (former Chair), but we have had no response from the Chancellor’s office.
- *Consortium member comment: there seems to be a focus on finances only in these discussions, maybe we need to discuss the intellectual benefits/consequences as well? A change in administrative campus would affect a lot of people: SJSU Research Foundation staff and MLML faculty currently employed by SJSU. Additionally, MLML has five pieces of property outside of the main building owned by SJSURF: Del Mar, Norte*

facility, Shore Lab/ Aquaculture Facility, Marine Ops, Sandholdt (future site of conference center, housing, etc.). All have titles held by SJSU Research Foundation.

- We are trying to reach out to inland campuses. We hope that restructuring can create more interaction within the consortium. Note: if restructuring happens, need to amend Bylaws, which currently state that the Chancellor names the Administrative campus of the equivalent unit. Will need consortium Presidents' support. *Suggestion to host a presidents meeting at MLML.*

#### *Lunch Break: 1215-1245*

##### *Jim Harvey*

- A deadline of July 31, 2016 was set to have a strategic plan for the Chancellor that would then be approved by the Governing Board.
- This strategic plan will be reviewed at the next Governing Board meeting in the Spring. The draft will be sent to all board members prior to the next meeting.
  - Question from Andrew: Regarding goals of restructuring the governance, reporting, visibility and efficiency of the budgeting.
- Restructuring and the joint PhD program with UCSC.
  - The potential PhD program would need to secure funding for students from UCSC.
- The UC school system is restructuring their financial order, which is based on how many PhD students are in their programs respectively.
- Jim said he has talked to the Dean at UCSC, and UCSC has limited funding for MLML PhD students.
- They suggested MLML find an endowment
- Concerns of having a PhD program include segregation between PhD and masters students.
- Possibly plucking of the brightest students by UCSC – understanding is that students will finish their MS at MLML with fast-track into UCSC PhD
- Talks have essentially stopped between Jim and UCSC Dean, but there is a push to reconvene the talks.
- UC Davis has also talked of a joint PhD program
- Superior Masters students are the product of MLML
- A joint PhD program may eliminate the prestige of the super Master students from MLML
- On a positive note, a PhD program can promote synergy for more students to apply for the PhD program

##### *Ron Coleman*

- Cohesiveness could be issue of 2-tier system

##### *Discussion followed:*

- Possibly a reverse scenario: Instead of finding funding, perhaps professors here can be mentors to the PhD students, no financial obligation on the part of MLML

- UCSC assumed that MLML faculty would support PhD students with grant funding

*Jim*

**TASK (GB members):** The Governing Board will provide written feedback on the draft Strategic Plan to Director of MLML before the next Governing Board meeting. By March all feedback should be submitted for a draft.

- Jim would appreciate more input from the Governing Board, not just advisory reports

### **Modifications to Bylaws**

- An ad hoc committee (Michael Parrish, James Lindholm, Michael Lee, and Jim Harvey) reviewed the MLML bylaws and found some errors which needed correction.

*Jim Harvey*

- Dissolution clause was missing from Bylaws, this was pointed out by the CO
- Clause for withdrawal from consortium missing
- How would students be affected by a campus withdrawal from consortium?
- SJSU is primary funder of MLML
- President of SJSU will have more say in decision making regarding the future of MLML

*Micheal Lee*

- Leaned on previous suspension/dissolution clauses he has had worked on for CSUEB Academic Senate to draft one for MLML.

*Jim Harvey*

- Will submit changes in bylaws to SJSU council for checking/official word-smithing
- For voting purposes, bylaws call for 1 faculty and 1 administrative member from each consortium campus. By-laws state that alternates are to be like positions – Board made suggestion to change to allow alternate for admin member to be second faculty at discretion of consortium campus.
- Suggestion to modify the bylaws so that the President of their university can designate another on campus to select Board members (e.g. a dean or provost).

### **Withdrawal Wording**

*Jim Harvey*

- Need a procedure for how withdrawal from consortium will work and how it gets approved
- If SJSU withdraws, then MLML will have difficulties because they are our major financial provider
- Students should be allowed to continue onto graduation even if program is removed from catalog
- Board can't stop withdrawal, but can hold up process to make sure procedure is followed. Up to campus to make justification for withdrawal.

### **Dissolution/Suspension**

- Would allow for 1-3 years to reorganize
- Contract between MLML and operating institution
- Would impact current graduate students

- Largest concern that might lead to dissolution is lack of funding, or, not enough students
- Suspension clause is there to prevent MLML from going straight to dissolution
- Dissolution has to go through the Governing Board to prevent unanimous decision by operating institution – can be initiated by Governing Board or CO.
- Have CSU council review Bylaws before submission to CO council
- TASK (MLML): Michael Lee and Jim Harvey will distribute revised Bylaws following SJSU council input to Governing Board, then to SJSU, and then back to Governing Board with new changes. A final draft will be created, distributed and then voted on at next board meeting (or electronically if there is sufficient time)

### **Weekend Course Update**

1. Trying to decide which faculty will teach the course and what course will be taught
2. Maybe 1-2 MLML faculty and 1-2 faculty from consortium faculty
3. Students could sleep in the seminar room at MLML
4. Two types of classes possible, interdisciplinary and multidisciplinary
5. Goal of starting this class is Fall of 2017
6. The class number would not change, so no changes needed to school code systems
7. How many units will the class be worth? Likely one unit (16 hrs)
8. Class would happen over one weekend
9. Should there be a cap on student enrollment for the weekend class? Upper division undergraduate students only?
10. Amy Wagner (CSU Sacramento) expressed interest in participating

### **Jim Harvey suggest motion for meeting to adjourn**

- Motion passes

*Meeting Adjourned: 1355*