

California State University

Ocean Studies Institute



Annual Report 2016-2017

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Mission

The OSI mission is to facilitate, advance, and support ocean studies¹ programs and activities on behalf of the California State University (CSU) that contribute to the advancement of knowledge and that provide the education and training necessary to inform the public and produce future professionals and regional, state, and national leaders in all matters concerning ocean and coastal systems and affairs.

¹ As used in this document, *ocean studies* is defined broadly and spans ocean- and coastal-related programs in such disciplines as the biological sciences, social sciences (including anthropology and sociology), chemistry, geology, earth and atmospheric sciences, physics, engineering, economics, and marine affairs. In this context, marine affairs is defined broadly to include largely interdisciplinary and applied programs concerned with the uses of ocean and coastal areas and their resources, including coastal zone management, marine policy, and marine commerce.



Who We Are

The OSI is a consortium of nine southern California CSU campuses: Channel Islands, Dominguez Hills, Fullerton, Long Beach, Los Angeles, Northridge, Pomona, San Bernardino, and San Marcos. The OSI complements other campus-based programs and consortia in the CSU and provides a cost-effective means for leveraging resources and promoting collaborative ocean and coastal programs and activities in the southern California region. As a member of the California State University's Council on Ocean Affairs, Science & Technology (COAST), the OSI adds to the CSU network of ocean studies programs and facilities and contributes to the goal of promoting marine science research and education throughout the CSU system. OSI is also a member of the Southern California Marine Institute (SCMI) which combines the marine resources of the University of Southern California, Wrigley Institute for Environmental Studies, University of California Los Angeles, Occidental College, Los Angeles Community College District, the Los Angeles Community College District (East Los Angeles, Los Angeles City, Los Angeles Harbor, Los Angeles Mission, Los Angeles Southwest, Los Angeles Trade-Technical, Los Angeles Valley, Pierce, and West Los Angeles Colleges), The Bay Foundation, and recently NOAA Fisheries West Coast Region. As a partner in the SCMI consortium, OSI is able to engage in specialized marine research that would not otherwise be possible independently, and to maximize the use of resources as well as collaborate on projects. SCMI/OSI is located in the heart of the Port of Los Angeles on Terminal Island. Our facility is a full-functioning marine research institute equipped with offices, laboratories, classrooms, a seawater filtration system, machine and wood shops, and a warehouse. There is ample docking space for small boats from various universities and organizations, as well as the CSU research vessel R/V Yellowfin.

Introduction

OSI has continued to work with SCMI on a new strategic plan in preparation for a multidisciplinary expansion to occur with the anticipated move to the new AltaSea facility at Berth 57 at the old City Dock 1 site in 2020. The AltaSea project continues to progress with the signing of the master lease with the Port of Los Angeles. AltaSea has moved forward with their development of industrial tenants in Berth 59 (Catalina Sea Ranch, Ocean Exploration Trust – EV Nautilus, and SpaceX). SCMI/OSI staff members have continued their work to improve the current Fish Harbor facility for use by faculty and students by expanding the seawater filtration system, completing a new dive locker, implementing a small boat operations course (which many OSI members are already taking advantage of), and renovating the classroom. The abalone aquaculture facility built in 2016 has provided multiple collaborative studies with Cal Poly Pomona, The Bay Foundation, NOAA and SCMI. The R/V Yellowfin

was fitted with two new Tier 4 diesel engines and two new generators, which should significantly increase its fuel efficiency and decrease emissions. .



What's New?

AltaSea Update



Plans for the AltaSea project, a 35 acre marine research campus at the Port of Los Angeles, have slowed as AltaSea leaders have tried to raise funds to start construction of Berth 57, which SCMI will occupy as the research hub of AltaSea. AltaSea has changed its plan for phasing development, focusing first on developing phase 1a, which now constitutes the revenue generating arm of the program by finding industrial partner tenants. The development of Berth 57 is now part of phase 1b development. OSI has worked with AltaSea to identify ways to work together in raising funds to support the construction of Berth 57. SCMI is especially excited for what AltaSea will provide for the Port of LA and surrounding communities, and OSI is excited about the opportunities AltaSea facilities will provide for CSU students and faculty for research, education, and community outreach and partnerships.





Annual Budget

Last 4 years

The Ocean Studies Institute's (OSI) funds are administered by the California State University Long Beach (CSULB) campus in FY 2016-17 was \$989,625 (Table 1). Expenditures over the same period were \$944,226 leaving a carry forward balance of \$45,399.

OSI revenues are obtained in three ways: 1) annual funding from the CSU, which is part of the CSULB General Fund, and designated as salaries and wages, benefits, and OE&E; 2) annual institutional contributions from OSI's CSU members, which are transferred to CSULB each year; and, 3) revenue from indirect cost returns from external grants and user fees originating from use of the OSI vessel/facilities by member institutions.

Table 1. Annual operating budget (revenue and expenditures) for fiscal years 2013-2017.

	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17
Fund Description				
Revenue				
Salaries and Wages ⁽¹⁾	\$371,145	\$397,139	\$481,698	\$492,443
Benefits	\$163,813	\$186,408	\$214,827	\$250,093
OSI Member Contributions ⁽²⁾	\$75,000	\$76,500	\$76,500	\$76,500
OE&E ⁽¹⁾	\$31,774	\$17,357	\$63,964	\$88,324
Misc Revenue and User Fees ⁽⁴⁾	\$46,928	\$47,197	\$66,390	\$82,265
Total	\$688,661	\$724,601	\$903,379	\$989,625
Expenditures				
Salaries and Wages	\$413,445	\$412,271	\$448,147	\$490,658
Benefits	\$168,254	\$189,592	\$214,827	\$256,605
Operating Expenses ⁽³⁾	\$90,356	\$80,129	\$199,344	\$194,857
Accounting Charges	\$1,761	\$2,694	\$2,863	\$2,106
Total	\$673,816	\$684,687	\$865,181	\$944,226
End-of-Year Balance	\$14,845	\$39,914	\$38,198	\$45,399

(1) In FY 2015-16, Revenue includes CO augmentation for Dive and Boating Safety Officer at \$115,000 (\$75,000 for Salary and \$40,000 for Other Expenses).

(2) OSI Members contributions are received annually and vary among the nine OSI institutions based on historic patterns of facilities and service use.

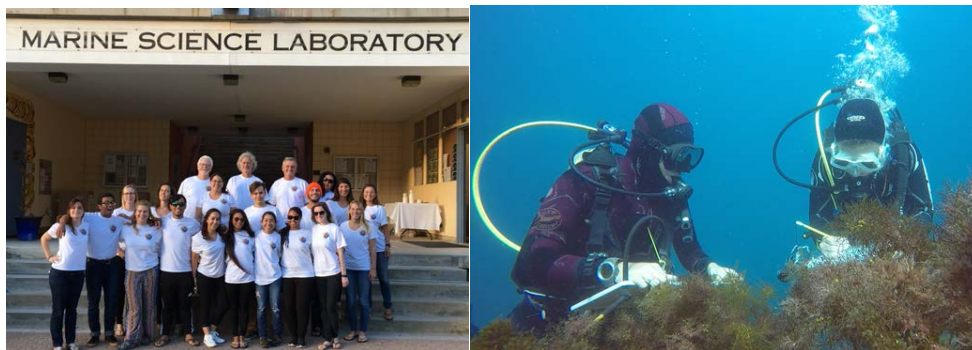
(3) Operating Expenses include contractual services, supplies, minor boat repairs, and diving related expenses.

(4) Miscellaneous OSI Revenue comes from indirect cost returns from external grants; user fees are associated with use of the R/V Yellowfin. This revenue source varies from year to year.

Educational Activities

CSU Marine Biology Semester on Catalina Island

The CSU Marine Biology Semester on Catalina continues to grow and benefit CSU students each Fall. The semester is a unique opportunity for CSU students to experience hands-on marine biology and guide them to a career in the marine sciences. The Fall 2016 Marine Biology Semester was a great success with a total of 15 students from six different CSU's attending. The semester was taught by professors: Dr. Larry Allen, Dr. Steven Dudgeon, Dr. Mark Steele, and Dr. Robert Carpenter, all from CSUN. We have received positive feedback from the participating students and are excited to see the program grow to more CSU campuses. Students conducted research projects on a large range of topics from elasmobranch habitat selection to photosynthetic rates of marine macroalgae.

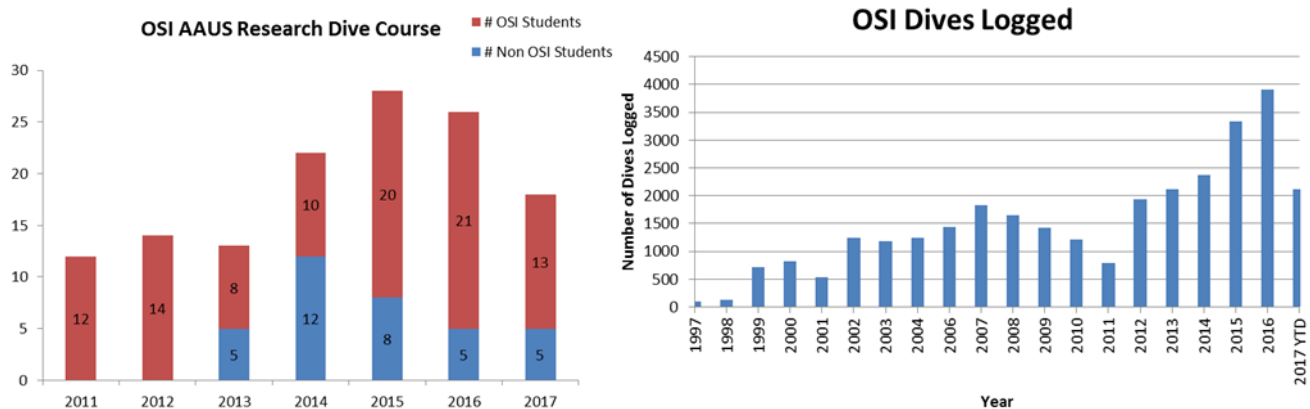


The Fall 2017 Catalina Semester is already underway. CSULB is this year's host campus, along with two CSULB professors and one guest professor from Cal Poly Pomona. There are a total of 17 students from 5 different universities. We cannot wait to see what great research projects come out of these students.

CSU Marine Biology Semester on Catalina Fall 2016			
University	# Students	Professors	Courses
CSUN	8	Dr. Larry Allen	Biol 421/592B – Marine Biology (4 units)
CSULB	3	Dr. Steven R. Dudgeon	Biol 531/592Q – Ecology of Marine Fishes (4 units)
CSUEB	1	Dr. Mark Steele	Biol 504/592P – Marine Phycology (4 units)
CSUSB	1	Dr. Robert C. Carpenter	Biol 490/495 – Directed Undergraduate Research (3 units)
CSUSM	1		
CSUF	1		
Total # Students	15		
Total # Schools	6		

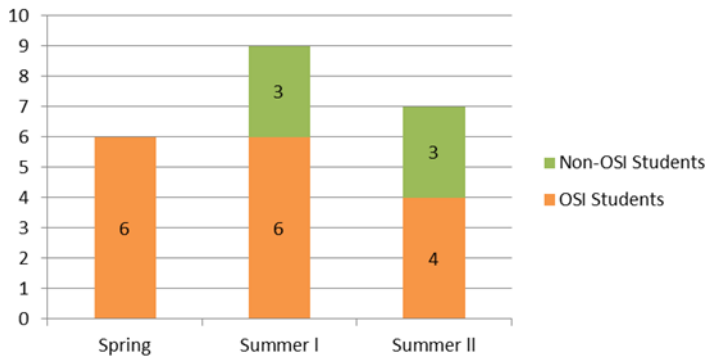
OSI AAUS Research Dive/Boating Safety Program

Current Dive Operations: Dive Locker renovations including a new compressor, Nitrox maker, gas banks and full-containment fill station along with additional wall storage, rolling gear racks, and lighting have been completed. Further renovations over the coming year will include additional overhead storage, workbenches and rinse bins, and a rollup door for better access to the locker. After a period of testing, tweaking, and breaking in the Nitrox system, we will be ready to begin offering Nitrox training courses this Fall. On the training side, we launched the DAN DFA Pro course (now recognized as the industry standard for emergency response training) and added an additional AAUS Scientific Diver course during the Summer of 2017 for a total of three course offerings.



Boat Operations: After conferring Lead Instructor Status on Darrell Montague and Jim Cvitanovich, the Scientific Boating Safety Association (SBSA) has recognized SCMI as the first official training facility in the region. We conducted our first five-day Motorboat Operator Training Course (MOTC) for non-experienced boat operators during the 2017 Spring Break for six students from CSULB. In conjunction with our two AAUS Scientific Diver courses, we offered two five-day MOTCs during the months of July and August, which brings the year-to-date total to twenty-four participants. Cohorts were comprised of candidates from CSU/OSI, Occidental College, NOAA, and CADFW. An additional three-day course for experienced boat operators will be conducted during the month of October, 2017. During 2018, five-day courses will again be offered during Spring Break, and in conjunction with our Summer AAUS Scientific Diver courses.

MOTC 2017 Courses



Demonstration Yellowfin Cruises

The CSU Ocean Studies Institute owns and operates the RV Yellowfin (80' research ship) to provide invaluable ship access for educational training of students, and faculty and student research. Our Yellowfin demonstration cruises have sustained their increased usage from last year providing 1,405 CSU students with invaluable ship-based training. With the help of our ship engineer and on-board demonstration techs we were able to give classes experience using real-world equipment and techniques such as VanVeen grabs, plankton tows, biological dredges and otter trawls not available to most major Universities that do not have access to ship resources. Because the Yellowfin was in dry dock for one month getting new energy efficient, reduced emission engines and generators, there were no cruises during that time.

SCMI implemented a new system aimed at facilitating data collection and entry from research cruises. This data set will include all the necessary information required to start an SCMI database where professors and students can easily access and manipulate data collected by all cruises. SCMI also plans on having surveys for students and faculty researchers to share how their experiences went to see how we can further improve these educational demonstrations.



Research Activities

OSI and SCMI have provided vessel support, equipment, and expertise to researchers from member and non-member campuses, and other organizations. This year SCMI has assisted researchers from University of Southern California, Occidental College, California State Universities Northridge and Long Beach, Claremont Colleges, NOAA, and the Ports of Los Angeles and Long Beach.

Project Updates

SCMI's Assisted Research Projects Include:

- Port of Los Angeles Water Quality Monitoring (POLA)
 - Real-Time Water Quality Monitoring Program
 - Monthly Water Quality Monitoring aboard R/V Yellowfin
- Biological Surveys of Los Angeles and Long Beach Harbors
- Barred Sand Bass Study - Dr. Larry Allen, CSUN
- Rocky Reef Ecology Studies - Vantuna Research Group
- The Bay Foundation Kelp Forest Restoration
- The Bay Foundation Abalone Recovery
- NOAA Ship of Opportunity Program
- San Pedro Ocean Time-Series SPOT
- Salt Pond Project - Dr. Christine Whitcraft, CSULB
- Temperature Influence on Ecology and Distribution of Intertidal Species - Dr. Sarah Gilman, Claremont Colleges
- Giant sea bass study – Dr. Larry Allen, CSUN



Vessel Use

R/V Yellowfin Usage by Institutions

This year, the R/V Yellowfin logged approximately 1,017 hours of vessel use. The trips consisted of a combination of class laboratories, graduate and university research, and contracted research. Although we did not see a significant increase in the number of students participating in trips this year, we conducted nearly the same number of hours of vessel use, as well as number of cruises. However, we did have a significant increase in the number of faculty and staff who used the vessel, which should correspond with an increase in vessel use for classes in the future. Now that the Yellowfin has new engines and will be more fuel efficient with reduced emissions, our goal is to continue increasing hours of vessel use and the total number of cruises for the 2017 – 2018 fiscal year, and we expect to meet that goal.

Institute Name	Students	Faculty and Staff	Hours of Vessel Use	# of Cruises
Ocean Studies Institute (OSI)	1405	96	501.2	84
Occidental College	235	33	95.5	18
University of California Los Angeles	0	25	46.75	4
University of Southern California	30	108	170.75	17
LA Community College District	95	6	37	6
POLA Water Quality Monitoring	0	24	84.25	11
Other universities, colleges, & cruises	337	23	82.5	18
Grand Total	2142	315	1017.95	158

5-year strategic plan

The OSI Board of Governors has begun addressing goals set forth in our 2016 5-year strategic plan that will be presented to the OSI faculty and discussed at a Spring 2017 Research Symposium. This new plan describes how OSI will move forward and prepare for our move to the new AltaSea facility. OSI has planned a fall workshop to increase multidisciplinary research collaborations within and among OSI campuses. This workshop will focus on several faculty-suggested research foci that can combine marine biology, engineering, computer science, social science and business.



GOAL 1. Continue and grow OSI's role in its strategic partnership in the Southern California Marine Institute (SCMI) in order to efficiently manage resources and develop and maintain vessels, equipment, and services in support of OSI education and research programs.

In 2016-2017, OSI leadership has worked closely with that of SCMI to better manage resources, maintain equipment and vessels, and support mutually beneficial educational and research programs such as CSU Catalina Semester, Boat and Diving Safety training programs. In addition, OSI has worked with SCMI leadership to develop a new mission statement and 5-year strategic plan to help SCMI prepare for the eventual move to AltaSea.

GOAL 2. Through OSI's role in SCMI, continue to work with and grow our collaboration with AltaSea.

In 2016-2017, OSI leadership has worked with SCMI to further development plans for Berth 57 at AltaSea and to develop a new 5-year strategic plan to better prepare SCMI for the transition to AltaSea. These plans will include strategies to increase SCMI member collaboration and training opportunities.

GOAL 3. Continue to offer the CSU Marine Biology Semester on Santa Catalina Island, while creating a more-sustainable funding plan.

OSI offered another successful Catalina Semester Fall 2016 program with 15 students from six OSI CSU campuses. The Fall 2017 program is currently running with 17 students from four OSI CSU campuses. OSI leadership began work on a new business plan for supporting the OSI Catalina Semester to encourage greater faculty participation. Options are being evaluated on ways to better support and fund this program.

GOAL 4. Develop and design new curricula, degree and/or non-degree programs for future implementation once OSI has access to the AltaSea marine science education and research facility.

After we have developed a strategic business plan for maintaining the OSI Catalina Semester, we will work on further developing the curriculum. This work will likely be initiated in Fall 2018.

GOAL 5. Facilitate and develop OSI research foci that support and create funding opportunities for OSI faculty and students.

OSI has planned a Fall 2017 research workshop to encourage and facilitate multidisciplinary research among faculty at OSI member campuses. This will be followed with a Spring 2018 research symposium.



GOAL 6. Expand OSI participation to include more faculty and students with expertise and interests in the social sciences (including anthropology and sociology), chemistry, geology, earth and atmospheric sciences, physics, engineering, economics, and marine affairs.

The initial step in this goal will be focused around our Fall 2017 research workshop.

Southern California Marine Institute Members

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*Fiscal & Administrative
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Carrie Wolfe
*Research & Education &
Operations Coordinator*

Dennis Dunn
*Captain
R/V Yellowfin*

Denis Mahaffy
Vessel Support Technician

Jim Cvitanovich
OSI Dive/Boat Safety Officer

Darrell Montague
OSI Dive/Boat Safety Officer

Ben Grime
Demonstration Technician

Mark Loos
*Demonstration Technician
Aquarist*

Joel Ingram
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*Facilities &
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