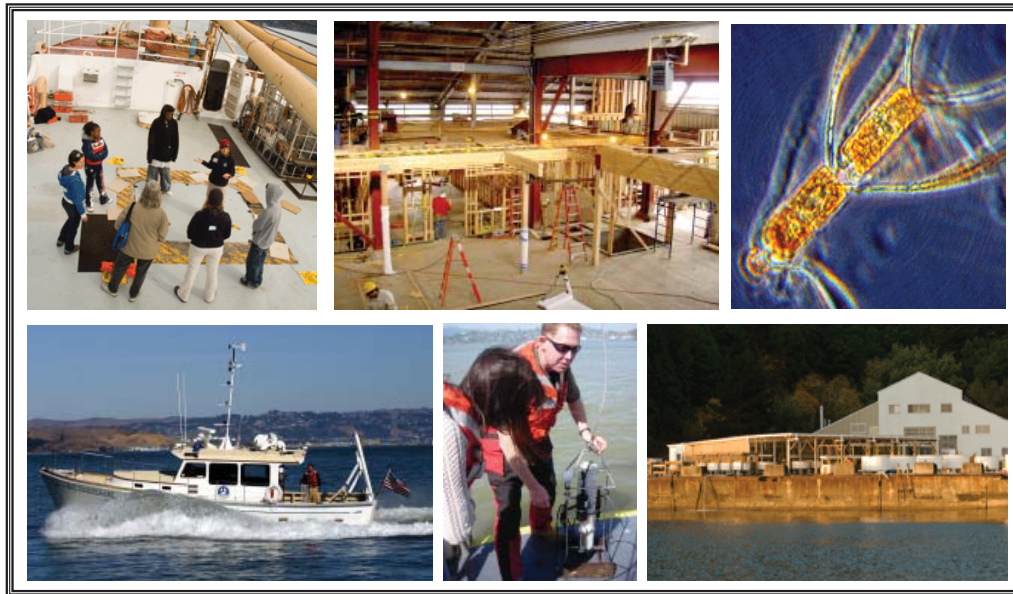




Romberg Tiburon Center for Environmental Studies

RTC, San Francisco State University's marine field station, is the only academic research facility on San Francisco Bay.



**San Francisco State University's Research and Service Organization
Annual Report - October 2007**

**By Dr. Newell Garfield
Director and Professor of Geosciences
Romberg Tiburon Center For Environmental Studies
San Francisco State University**



**SAN FRANCISCO
STATE UNIVERSITY**

Romberg Tiburon Center For Environmental Studies San Francisco State University

1. Brief summary of major activities during the past year.

Selected highlights from 2006-2007:

- Two searches were held to select a new Director for RTC. The second search was successful and Dr. Newell Garfield was appointed Director of the Romberg Tiburon Center for Environmental Studies in May 2007.
- Grant activity at RTC remains strong with 16 new grants being awarded in the sum of \$1.5 million.
- Major funded projects continue to bring significant acclaim and resources to SFSU— CALFED (~500 K), NOAA use of HF radar (~230 K), and others.
- The phase III renovation of Building 36 with funding from the National Oceanic and Atmospheric Administration (NOAA), the Marin Foundation and the Keck Foundation was completed. The renovation provides facilities for the SF Bay NERR (National Estuarine Research Reserve), two modern classrooms, two research laboratories, office space for six faculty and administration offices.
- Nine acres of land, including 9 buildings, formerly owned and used by NOAA were officially transferred to SFSU.
- The RTC seawater system underwent significant improvements that will allow more utilization of seawater in research and teaching.
- 6 Students completed their Masters Degrees.
- Increased numbers of undergraduate and graduate students on site at RTC -- received numerous prestigious awards such as the EPA Star Fellowship, Knauss Public Policy Internship, NSF Teaching Fellowships, ARCS Fellowship and a host of internal scholarships.
- Our Outreach Program remains successful with the hiring of a new Outreach and Education Coordinator, Erin Blackwood.

The Romberg Tiburon Center for Environmental Studies (RTC) is the marine research field station of San Francisco State University and is located approximately 20 miles north of the main campus on the Tiburon Peninsula. RTC is situated on a 34-acre waterfront parcel. The physical facilities are comprised of the original six buildings: Building 36 - the main research/laboratory facility and lease holders Weston Solutions, Inc.; Building 39 - the administrative/teaching facility and lease holders Marin Biological Laboratory, Inc.; Building 53 - the Bay Conference Center; Building 49 - the Marine/Technical Operations Shops and the Art Department graduate student studios; Building 50 - the storage facility and Anthropology archives; and Building 20 - the Guest Center. On the former NOAA parcel we currently occupy Building 54 - the physiology and wetlands ecology laboratory, Building 74A - the postdoctoral associates offices, Building 74 - facilities headquarters and boat/vehicle storage, Building 30 - faculty and student offices, and lease holders SERC, and Taxon. RTC also owns several boats used for research including a 38' aluminum hulled vessel, *the R/V Questuary*, a Twin V outboard, and a 16' Boston Whaler.

Organization and Structure

Administrative responsibility for RTC resides at SFSU. RTC is administered by a Director who answers directly to the Dean of the College of Science and Engineering (Dr. Sheldon Axler), the Provost (Dr. John Gemello), and the President of the University (Dr. Robert Corrigan). Dr. Newell Garfield served as Acting Director through April 2007 and was appointed Director of RTC in May 2007. RTC's scientific staff consists of the Director, 6 other tenured or tenure-track faculty with appointments in home departments at SFSU, 7 research scientists, 1 professors emeritus, 7 postdoctoral associates, 18 visiting scientists, 16 research technicians, and an on-site staff of 21 persons. Two of our faculty members, Stephen Bollens and Carlos Crocker left SFSU for positions at other institutions. Dr. Michael Josselyn, Professor Emeritus, was also removed from the list of research scientists, at his request, in that he no longer conducts research at SFSU. In AY 2006-2007 there were 41 graduate students, 17 undergraduate student assistant, 1 undergraduate intern, 10 undergraduate volunteers, 3 high school student volunteers, and 8 volunteers involved in laboratory research.

The RTC campus is well suited to host organizations whose mission complements RTC through student opportunities and intellectual collaboration. There is one SFSU entity and three tenants on site.

The San Francisco Bay National Estuarine Research Reserve (SFB NERR) is a joint federal-state-local collaboration whose mission is to promote scientific research of the remaining Bay wetlands for better management and successfully restoration these important habitats, and so that citizens can enjoy a healthier Bay. The SFB NERR presently has two field sites, China Camp State Park and Rush Ranch Open Space Reserve. The SFB NERR headquarters is at RTC and all personnel are SFSU employees or students. The SFB NERR operating budget is not included in the RTC RSO report. The research activity of the Director, Jaime Kooser, and Research Coordinator, Drew Talley, are included in the grant reporting.

The three RTC tenants are the Marin Biologic, Smithsonian Institution Invasive Species Program (SERC), and Taxon. These tenants are all laboratory based research operations

whose missions enhance the activity on the campus. Their combined staffs resulted in 37 scientists and support staff on site. Their rental fees are included in the RTC income.

Goals and Objectives

The mission of the Romberg Tiburon Center for Environmental Studies is to provide an interdisciplinary understanding of complex marine and estuarine environments. RTC scientists pursue research focused on questions regarding fundamental marine issues, train the next generation of scientists, and provide knowledge that allows informed environmental decision-making and stewardship.

The Romberg Tiburon Center strives to be recognized as a leading estuarine and coastal academic institution on the West Coast of the United States of America. As the only marine science teaching and research facility located on San Francisco Bay, the 2nd largest estuary in the United States, our laboratory stretches from our doorstep to coastal environments all around the world. RTC's goal is to provide modern innovative facilities and to secure the resources to facilitate the scientific research necessary to comprehend and elucidate the complex processes of estuarine and coastal marine environments. We endeavor to prepare the next generation of scientists to carry on this critical work around the world through hands on research under the direct mentorship of renowned university faculty. We are committed to serving the urban population by imparting a means for the comprehensive knowledge and appreciation of environmental issues, sustainability and stewardship.

Activities undertaken in areas of research, service, teaching to meet these goals and objectives

Researchers, faculty and students study biodiversity, community ecology, ecological physiology, evolutionary biology, microbiology, molecular biology, oceanography and wetland ecology and restoration. RTC scientists are the recipients of numerous awards that support this type of research, the findings of which are published in prestigious scientific journals. RTC has emerged as a major player in establishing California cooperative science programs including -- CALFED, an organization of California and Federal institutions and agencies collaborating on San Francisco Bay and Delta environmental and conservation issues, CICORE, the Center for Integrative Coastal Observation, Research and Education; CenCOOS, Central California Ocean Observing Systems, and COCOMP Coastal Ocean Currents Monitoring Program. The latter is a CA voter-approved system to monitor coastal circulation in near real time.

RTC faculty and lecturers successfully accomplish their teaching mission both in their laboratories and in the classroom. During AY 06-07 classes were conducted on site at RTC, and faculty also taught courses on the main campus during this period as well. In the research laboratories undergraduate students and graduate students worked on their research projects under the direction of RTC scientists, with 6 completing their thesis this year. Students regularly publish the results of their research and attend scientific meetings where they make oral and poster research presentations.

RTC's well-articulated educational outreach goals are met in a variety of ways. Summer session classes at RTC are offered through the College of Extended Learning (CEL) and are therefore, open to the community. RTC offers a Wetlands Science series of short courses aimed at professional training in wetlands science and management. Project-based learning

workshops are conducted on-site by RTC researchers for middle and high school teachers in the fall and spring semesters. RTC researchers also gave presentations through out the year at community organizations such as the Rotary Club of Tiburon, published articles in local newspapers, and served as judges at county science fairs. In addition, RTC held its annual open house event, Discovery Day, where the general public is invited on-site to interact with scientists and learn more about RTC's research and teaching activities, attracting more than 1000 community members to the Center. The RTC Outreach Coordinator with the assistance of both RTC graduate and undergraduate students are involved with outreach activities including our Guest Scientist partnership with the Bay Area Discovery Museum, Coastal Clean-up Day, and many other local and national environmental education events. The solar installation on our Bay Conference Center, funded by foundation and private donor dollars, exemplifies the goals of the Center and positions the university as an environmental leader in the community. RTC utilizes the electricity generated to power the conference center, as well as our electric vehicle, and we offer electric vehicle charging to the local community at no cost.

Nature, Source and Amount of Funding

RTC received funding from several sources in FY 06-07. SFSU provided salary support through the College of Science and Engineering budget for some of our faculty, lecturers and administrative staff; the Bay Conference Center/Tiburon Properties account paid for their supplies and expenses; and an SFSU special trust account provided the annual allocation for the remaining staff salaries and operating expenses. Private donations received by RTC are also held at the University Corporation, San Francisco State (SFSU Foundation) and in FY 06-07 these funds were used to support student travel and scholarship, facilities improvements, and renovations; as well as a fee based fund at the Foundation for the R/V Questuary which contributed to its operating expenses. Funding amounts including total grant monies received by RTC PIs are shown below for fiscal years 2002 through 2007, and the fiscal year budget is presented in items #8. There were 54 RTC active grants, 16 were started during fiscal year 2006-2007. There were 6 NERR active grants and 2 were started during fiscal year 2006-2007.

RTC TOTAL REVENUES 2002-2007

<u>Category</u>	<u>FY 02-03</u>	<u>FY 03-04</u>	<u>FY 04-05</u>	<u>FY 05-06</u>	<u>FY 06-07</u>
SFSU allocation	\$770,529	\$1,053,148	\$1,167,133	\$1,190,472	\$1,350,020
COSE Salary Support	\$417,644	\$473,314	\$474,706	\$478,749	\$516,379
COSE Supplies & Expense	\$0	\$0	\$-21,041	\$0	\$0
SFSU Facilities Support/budget cuts	\$0	\$0	\$0	\$0	\$0
SFSU support subtotal	\$1,188,173	\$1,526,462	\$1,620,798	\$1,669,221	\$1,866,399
BCC/Tiburon Properties Revenue	\$191,363	\$196,076	\$199,703	\$203,690	\$168,211
<i>Questuary</i> Revenue	\$28,950	\$22,409	\$25,000	\$54,491	\$59,137
RRT, Chargebacks, Refunds	N/A	\$11,777	\$25,000	\$79,994	\$260,252
Other Subtotal	\$220,313	\$230,262	\$249,703	\$338,175	\$487,600
Private Donations	\$97,307	\$31,995	\$60,500	\$150,328	\$42,067
Private Foundation Awards	\$859,000	\$5,000	\$150,000	\$0	\$445,000
Donations & Awards Subtotal	\$956,307	\$36,995	\$210,500	\$150,328	\$487,067
TOTAL REVENUE	\$2,364,793	\$1,793,719	\$2,081,001	\$2,157,724	\$2,841,066

GRANT AWARD SUMMARY 2002-2007

<u>Category</u>	<u>FY 02-03</u>	<u>FY 03-04</u>	<u>FY 04-05</u>	<u>FY 05-06</u>	<u>FY 06-07</u>
RTC Grants Awarded per Fiscal Year	7	19	13	14	16
RTC Awards Granted per Fiscal Year	\$1,099,966	\$6,550,167	\$10,232,682	\$3,011,675	\$1,473,921
RTC Expenses against all Active Grants	N/A	N/A	2,786,092	\$4,589,923	\$5,125,673
RTC Indirect Costs Generated Against all Active Grants	\$832,493	\$737,365	\$672,446	\$824,813	\$733,178
NERR Grants Awarded per Fiscal Year	N/A	N/A	2	2	3
NERR Awards Granted per Fiscal Year	N/A	N/A	\$534,000	\$465,000	\$209,375
NERR Expenses against all active Grants	N/A	N/A	\$352,230	\$2,070,581	\$1,029,303
NERR Indirect Costs Generated Against all Active Grants	N/A	N/A	\$5,614	\$68,705	\$146,844

SUMMARY OF APPENDED DATA

Category	2002-2003 Total Number	2003-2004 Total Number	2004-2005 Total Number	2005-2006 Total Number	2006-2007 Total Number
RTC enrollments	81	52	101	76	188
Campus enrollments for RTC faculty	127	592	713	562	480
Peer reviewed publications	79	87	76	30	26
Non peer reviewed publications	26	17	12	2	0
Resident PhD level scientists	18	19	21	19	15
Postdoctoral Associates	8	6	4	6	7
Visiting Scientists	2	1	6	12	18
Research Technicians	37	27	25	18	16
Graduate Students (includes art students)	53	35	38	50	41
Student Assistants/Undergrads	1	7	13	6	17
Interns/Undergraduates	4	7	4	0	1
Volunteers/Undergraduates	10	8	3	8	10
Volunteers	3	5	10	12	8
High School Students	7	3	3	3	3
Staff	10	14	13	23	21
Theses Completed by RTC Students (total to date)	54	61	70	83	89

2. Names, titles, and organizational affiliations of persons serving on the RSO's advisory committee.

**ROMBERG TIBURON CENTER
BOARD OF DIRECTORS
2006-2007**

Chairman of the Board: Hank Broderick
Vice Chairman: Bob Ohrenschall
Executive Secretary: Dr. Sheldon Axler
Director: Dr. Newell Garfield

Name/E-mail	Committee Assignment	Affiliation/Business
Howard Allen	Advancement Committee	Belvedere Land Company
Scott Anderson	Facilities Committee	City of Tiburon
William Atchley, M.D.	Education Committee	Retired Physician
Sheldon Axler, Ph.D.	Advancement Committee	San Francisco State University
George Brewster	Nominating Committee	Kiwi Properties
Henry "Hank Broderick	Government Affairs Committee	Retired Marin Co. Superior Court Judge
Dr. Margaret "Meg" Burke	Education Committee	California Academy of Sciences
Margaret A. Elliot	Educational Committee	College of Marin
Dr. Terrence Gosliner	Education Committee	California Academy of Sciences
Robert Heller	Advancement Committee	Federal Reserve Board
Dr. Millie Hughes-Fulford	Education Committee	Medical Principal Investigator Retired NASA Astronaut
Russell D. Keil, Jr.	Advancement Committee	Keil Estate Management Co.
Dr. James Kelley	Education Committee	Retired SFSU College of Science & Engineering Dean
Michael W. Keran, Ph.D.		Intermittent Economic Advisor
John H. Kern	Facilities Support	Professional Engineer
Don Lollock	Nominating Committee	BCDC/Retired from California Department of Fish and Game
Dr. John Northwood	Education Committee	Northwood and Associates Geophysicist
Robert Ohrenschall	Advancement Committee	Emeritus Addison Design (formerly Soyster & Ohrenschall, Inc.
Dr. Mark D. Reynolds	Government Affairs Committee	The Nature Conservancy
Ann Stephens	Nominating Committee	Compton Foundation

Dr. Ed Ueber	Education Committee	Gulf of the Farallones/Cordell Bank
Effie Westervelt	Advancement Committee	
James G. Wilson, AIA	Facilities Support	Architect (AIA)/Professional Engineer
Erin Blackwood	Ex-Officio	RTC Outreach Coordinator
Dr. Toby Garfield	Ex-Officio	Director RTC Professor of Geology/SFSU
Stephanie Kiriakopolos	Ex-Officio	RTC Student Assoc. Rep
Dr. Jaime Kooser	Ex-Officio	Director SF Bay NERR
Adria O'Dea	Ex-Officio	RTC Marketing Coordinator (former RTC Outreach Coordinator)
Raman Paul	Ex-Officio	RTC Administrative Coordinator
Alissa Arp, Ph.D.	Honorary Board Member	(Former Director Romberg Tiburon Center)
Sarane Bowen	Honorary Board Member	Retired SFSU Professor
Randy Brown	Honorary Board Member	Retired Scientist, DWR
William Davoren	Honorary Board Member	Retired Bay Institute
Phyllis Faber	Honorary Board Member	Botanist
Marty Griffin	Honorary Board Member	Physician
Bettina Hughes	Honorary Board Member	Educator
Gabriella Isaacson	Honorary Board Member	
Mike Josselyn	Honorary Board Member	Retired SFSU Professor/Consultant
Doug McConnell	Honorary Board Member	Bay Area Backroads
John McCosker	Honorary Board Member	California Academy of Sciences
Betsey Scarborough	Honorary Board Member	
John Silcox	Honorary Board Member	
Dr. Thomas Spencer	Honorary Board Member	SFSU Professor of Psychology
David Werdegar	Honorary Board Member	

3. Names of faculty members actively engaged in the RSO's research and scholarly and creative activities or its supervision.

Roger Bland, Physicist; studies underwater acoustical monitoring using sonar signals to measure water temperature and current speed circulation patterns in SF Bay.

Katharyn E. Boyer, Wetland and Coastal Community Ecologist; studies the role of species interactions in ecosystem functioning, invasive species, nutrient dynamics, and restoration in wetland and seagrass systems.

Edward J. Carpenter, Biological Oceanographer; studies the ecology of marine phytoplankton, particularly cyanobacteria, and factors affecting primary productivity, phytoplankton species composition, and nutrient cycling in the sea..

William P. Cochlan, Marine Microbial Ecologist/Biological Oceanographer; studies the physiology and ecology of phytoplankton and bacteria, including Harmful Algal Blooms (HABs).

Sarah Cohen, Ecological Evolutionary Biologist and Population Geneticist; studies connectivity of marine populations, human impacts on aquatic systems, immunogenetics and recognition systems.

Richard C. Dugdale, Biological Oceanographer; studies distributions and effects of nutrients on oceanic productivity in estuarine, coastal, and equatorial upwelling areas.

Patricia G. Foschi, (Emeritus) Remote Sensing Specialist and Physical Geographer; integrates remote sensing, GIS and data mining for wetland monitoring and management applications.

Newell Garfield, Physical Oceanographer; studies oceanic circulation in coastal regions and over continental margins using remote sensing and free-drifting buoy technologies.

Wim Kimmerer, Biological Oceanographer; studies growth and predation processes in zooplankton, computer modeling of ecological systems, and analysis of human impacts on estuarine and marine ecosystems.

Tomoko Komada, Biogeochemist; studies the dynamics of organic matter in marine and freshwater systems, with focus on the factors affecting the long-term organic carbon cycle.

Jaime C. Kooser, Resource Geographer; manages the SF Bay National Estuarine Research Reserve with a focus on tidal marsh restoration, using science to inform coastal resource management decisions, and studying the relationship between land use and water quality.

Dale Robinson, Phytoplankton Ecologist and Physiologist; examines changes in ocean productivity and photosynthesis that result from variations in the physical environment.

Jonathon H. Stillman, Marine Ecological Physiologist; studies adaptations of marine organisms to environmental stress, including temperature stress and the effects of climate change.

Drew Talley, Biological Oceanographer; as Research Coordinator of the San Francisco Bay NERR, studies the influence of habitat connectivity on wetland and coastal community structure and function, focusing on conservation and restoration importance.

Frances P. Wilkerson, Marine biologist/Biological Oceanographer; studies the rate of phytoplankton in nitrogen cycling in coastal and estuarine ecosystems with a focus on diatom ecology.

4. Visiting Scientists who actively worked at RTC during the AY 2006/2007 with faculty members or senior research scientists.

Kelly Agnew, Hendrix College – Estuarine Fish Evolution
 Adam Baines, University of Washington – Wetland Ecology Research
 Daniel Barshis, University of Hawaii – Ecological Physiology Research
 Andrew Bishop, University of Washington – Wetland Ecology Research
 Jesse Campbell, Virginia Institute of Marine Science – Wetland Ecology Research
 Andrew Chang, University of California, Davis – Invasive Species Research
 Risa Cohen, Georgia Southern University - Marine Microbiology Research
 Kelly Lee, Smithsonian Institute – Invasive Species Research
 George McManus, University of Connecticut – Delta Smelt Foodweb Research
 Lisa Pickell, University of Maine – Marine Microbiology/Oceanography Research
 Aileen Ponio, University of Washington – Wetland Ecology Research
 Gregory Ruiz, Smithsonian Institute - Invasive Species Studies Research
 Kate Selting, University of Washington – Wetland Ecology Research
 Ginger Shoemaker, University of Washington – Wetland Ecology Research
 Erin Spear, University of Washington – Wetland Ecology Research
 Heidi Weiskel, University of California, Davis – Wetland Ecology Research
 Christine Whitcraft, California State University, Long Beach – Wetland Ecology Research
 Joanna York, University of Connecticut – Delta Smelt Foodweb Research

5. Names of undergraduate and graduate students, postdoctoral fellows, research technicians, student assistants, interns, volunteers, and administration and facilities staff directly contributing to the unit who are on the unit's payroll, participate through assistantships, fellowships, or traineeships, or are otherwise involved in the unit's work.

<u>Staff Member</u>	<u>Status</u>	<u>Research Field/Role</u>
Dr. Alex Parker	Post Doc	Bio Oceanography/Phytoplankton
Al Marchi	Research Technician	Bio Oceanography/Phytoplankton
Victoria Hogue	Research Technician	Bio Oceanography/Phytoplankton
Laila Barada	Graduate Student	Bio Oceanography/Phytoplankton
James Fuller	Graduate Student	Bio Oceanography/Phytoplankton
Amy Kleckner	Graduate Student	Bio Oceanography/Phytoplankton
Kevin Lew	Graduate Student	Bio Oceanography/Phytoplankton
Charles Buhler	High School Student	Bio Oceanography/Phytoplankton
Christopher Grace	Volunteer	Bio Oceanography/Phytoplankton
Courtney Scott	Volunteer	Bio Oceanography/Phytoplankton
Jonathon Polly	Graduate Student	Chemical Oceanography
Mark Anderson	Student Assistant/Undergraduate	Chemical Oceanography
Corin Dorfmeier	Student Assistant/Undergraduate	Chemical Oceanography
Ramiz Mogannam	Student Assistant/Undergraduate	Chemical Oceanography
Yvonne Mak	Student Assistant/Undergraduate	Chemical Oceanography

Yanni Zhou	High School Student	Chemical Oceanography
Catherine Cassou	Volunteer	Chemical Oceanography
Dr. Abderrahmane Tagmount	Post Doc	Eco Physiology
Jane Winhall-Rice	Research Technician	Eco Physiology
Eric Galassi	Graduate Student	Eco Physiology
Joanna Lipinski-Krusaka	Graduate Student	Eco Physiology
Beth Moore	Graduate Student	Eco Physiology
Diana Baldwin	Student Assistant/Undergraduate	Eco Physiology
Andrea Cayenne	Student Assistant/Undergraduate	Eco Physiology
Annupama Sharma	Student Assistant/Undergraduate	Eco Physiology
Morrigan Shaw	Student Assistant/Undergraduate	Eco Physiology
Uriah Giles	Volunteer	Eco Physiology
Eddy Mazmanian	Volunteer/Undergraduate	Eco Physiology
Jenna Rais	Volunteer	Eco Physiology
Claudia Tomas	Volunteer/Undergraduate	Eco Physiology
Dr. Keun-Hyung Choi	Post Doc	Estuarine Zooplankton Ecology
Dr. Karen Edwards	Post Doc	Estuarine Zooplankton Ecology
Dr. Lindsay Sullivan	Post Doc	Estuarine Zooplankton Ecology
Toni Ignoffo	Research Technician	Estuarine Zooplankton Ecology
Mary Helen Nicolini	Research Technician	Estuarine Zooplankton Ecology
Anne Slaught	Research Technician	Estuarine Zooplankton Ecology
Allegra Briggs	Graduate Student	Estuarine Zooplankton Ecology
John Durnad	Graduate Student	Estuarine Zooplankton Ecology
Alison Gould	Graduate Student	Estuarine Zooplankton Ecology
Laurie Kara	Graduate Student	Estuarine Zooplankton Ecology
Renny Talianchich	Graduate Student	Estuarine Zooplankton Ecology
Dr. Sheng Liu	Post Doc	Marine Microbiology
Joelle Tirindelli	Research Technician	Marine Microbiology
Shaun Baesman	Graduate Student	Marine Microbiology
Jeana Drake	Graduate Student	Marine Microbiology
Ulrika Lidstrom	Graduate Student	Marine Microbiology
Jennifer O'Brien	Graduate Student	Marine Microbiology
Jennifer Yorty	Graduate Student	Marine Microbiology
Chris Ikeda	Volunteer/Undergraduate	Marine Microbiology
Julian Herndon	Research Technician	Marine Microbiology/Oceanography
Maureen Auro	Graduate Student	Marine Microbiology/Oceanography
Brian Bill	Graduate Student	Marine Microbiology/Oceanography
Regina Radan	Graduate Student	Marine Microbiology/Oceanography
Julia Betts	Student Assistant/Undergraduate	Marine Microbiology/Oceanography
Mayra Flores	Student Assistant/Undergraduate	Marine Microbiology/Oceanography
Rachel Townsend	Student Assistant/Undergraduate	Marine Microbiology/Oceanography
Dr. Brian Ort	Post Doc	Marine Ecology and Evolution
Karen Alroy	Research Technician	Marine Ecology and Evolution
Esa Crumb	Graduate Student	Marine Ecology and Evolution
Molly Klein-McDowell	Graduate Student	Marine Ecology and Evolution
Joelle Tirindelli	Graduate Student	Marine Ecology and Evolution
Verena Wang	Graduate Student	Marine Ecology and Evolution
Julie Day	Student Assistant/Undergraduate	Marine Ecology and Evolution
Jessica Donald	Student Assistant/Undergraduate	Marine Ecology and Evolution
Summer Morrisson	Student Assistant/Undergraduate	Marine Ecology and Evolution
Amelia Rodelo	Student Assistant/Undergraduate	Marine Ecology and Evolution
Valerie Green	Volunteer/Undergraduate	Marine Ecology and Evolution
Patrick Lee	Volunteer/Undergraduate	Marine Ecology and Evolution
Kelley O'Dea	Volunteer/Undergraduate	Marine Ecology and Evolution
Jonathon Lew	Volunteer	Marine Ecology and Evolution
Ritchelle Quiambao	Volunteer/Undergraduate	Marine Ecology and Evolution
Ashley Smith	Volunteer/Undergraduate	Marine Ecology and Evolution

Justin Marx	High School Student	Marine Ecology and Evolution
Dwight Peterson	Research Technician	Physical Oceanography
Jonathan Brown	Graduate Student	Physical Oceanography
Aimee Good	Research Technician/Program Coordinator	Physical Oceanography/COCMP
Krista Kamer	Program & Outreach Coordinator	Physical Oceanography/ COCMP/CICORE
Regan Long	Research Technician	Physical Oceanography/COCMP
Jim Pettigrew	Research Technician	Physical Oceanography/COCMP
Chris Raleigh	Research Technician/Equipment Specialist	Physical Oceanography/CICORE
Laura Reynolds	Research Technician	Wetlands Ecology
Brittany Huntington	Research Technician	Wetlands Ecology
Lindsey Carr	Graduate Student	Wetlands Ecology
Brittany Huntington	Graduate Student	Wetlands Ecology
Stephanie Kiriakopolos	Graduate Student	Wetlands Ecology
Anya Perron-Burdick	Graduate Student	Wetlands Ecology
Amelia Ryan	Graduate Student	Wetlands Ecology
Bianca Dailey	Intern/Undergraduate	Wetlands Ecology
Gavin Archbald	Student Assistant/Undergraduate	Wetlands Ecology
Nishad Patel	Student Assistant/Undergraduate	Wetlands Ecology
Gwen Santos	Student Assistant/Undergraduate	Wetlands Ecology
Alexis Fisher	Volunteer/Undergraduate	Wetlands Ecology
Erin Blackwood	Outreach Coordinator	Administrative Staff
Doreen Britton	Financial Coordinator	Administrative Staff
Jose Flores	BCC Support/Janitor	Administrative Staff
Dinh Ho	Information Technology	Administrative Staff
Dennis Huggins	Maintenance Supervisor	Administrative Staff
Gary, Ingerson	Facilities Project Supervisor	Administrative Staff
Bill Johnson	Janitor	Administrative Staff
Brita Larsson	Laboratory Coordinator	Administrative Staff
David Bell	Marine Superintendent.	Administrative Staff
David Morgan	Marine Operations Mgr.	Administrative Staff
Adria O'Dea	Outreach Coordinator	Administrative Staff
Raman Paul	Administrative Coordinator	Administrative Staff
Chanh Rattana	Building Maintenance/BCC	Administrative Staff
Karyn Scurti	Events/BCC Coordinator	Administrative Staff
Diana Sanders	Volunteer	Administrative Staff
Jennifer Beggs	Administrative Coordinator	SF Bay NERR
Nicole Christiansen	SWAMP Coordinator	SF Bay NERR
Sarah Davies	Education Coordinator	SF Bay NERR
Laurie Kara	Administrative Coordinator	SF Bay NERR
Lara Martin	Monitoring Technician	SF Bay NERR
Marina Psaros	Coastal Training Program Coord.	SF Bay NERR
Jessica Schneider	SWAMP Coordinator	SF Bay NERR

Male and female breakdown and ethnic make up of the Romberg Tiburon Center staff listed above.

Groups	#	Male	Female	White	African American	Asian	Hispanic	Native American	Pacific Island
Ph.D.	15	9	6	14		1			
Post Doc	7	5	2	5		2			
Visit Scientists	18	6	12	16		1	1		
Research Technicians	16	5	11	15			1		
Grad Students	31*	7	24	27		2.5	1	.5	
Student Asst./ Undergrads	17	4	13	9.5	1.5	2	2	2	
Intern/ Undergrad	1		1				.5	.5	
Volunteer/ Undergrads	10	3	7	5		3	1.5	.5	
Volunteer	8	3	5	5	1	1	1		
High School Student	3	2	1	2		1			
Staff	21	9	12	15	1	3	1	1	
Totals	147	53	94	113.5	3.5	16.5	9	4.5	0

* Art Department Students are not included. Ethnicity data is not requested of these students.

The SFSU Art Department utilizes one floor in Building 49 and three research groups lease laboratory and office space at the Romberg Tiburon Center. The names of these students and researchers and their staff are listed below along with their affiliations.

Dawn Marie Forsyth	Graduate Student	Art Department
Bradley Hyppa	Graduate Student	Art Department
Antonios Kosmadakis	Graduate Student	Art Department
Emily McLeod	Graduate Student	Art Department
Benjamin Meyer	Graduate Student	Art Department
Michael Namkung	Graduate Student	Art Department
Elizabeth Rossos	Graduate Student	Art Department
Anthony Ryan	Graduate Student	Art Department
Chano Uribe	Graduate Student	Art Department
Allison Watkins	Graduate Student	Art Department
Chela Zabin	Program Manager	Smithsonian (SERC)/Invasive Species
Christopher Brown	Research Technician	Smithsonian (SERC)/Invasive Species
Jelle Faber	Research Technician	Smithsonian (SERC)/Invasive Species
Basma Mohammad	Research Technician	Smithsonian (SERC)/Invasive Species
Safra Altman	Visiting Scientist	Smithsonian (SERC)/Invasive Species
Sarikka Attoe	Visiting Scientist	Smithsonian (SERC)/Invasive Species
Scott Bodensteiner	Environmental Analyst	Weston Solutions/Toxicology/Bioassay
Susanne Brander	Environmental Analyst	Weston Solutions/Toxicology/Bioassay
Debbie Collins	Environmental Analyst	Weston Solutions/Toxicology/Bioassay
Francesca Innocenti	Environmental Analyst	Weston Solutions/Toxicology/Bioassay
Debbie Marcal	Environmental Analyst	Weston Solutions/Toxicology/Bioassay
Jenner McCloskey	Environmental Analyst	Weston Solutions/Toxicology/Bioassay
Rod Millward	Environmental Analyst	Weston Solutions/Toxicology/Bioassay
Arron Riutta	Environmental Analyst	Weston Solutions/Toxicology/Bioassay

Paul Ward	Environmental Analyst	Weston Solutions/Toxicology/Bioassay
Matt Zinkel	Environmental Analyst	Weston Solutions/Toxicology/Bioassay
Tom Caudle	IT Specialist	Marin Biologic Inc./Cancer Research
Matt Krueger	Research Scientist	Marin Biologic Inc./Cancer Research
Heather Martin	Accountant	Marin Biologic Inc./Cancer Research
Kirsten Fletcher	Research Scientist	Marin Biologic Inc./Cancer Research
Lou Gavino	Research Scientist	Marin Biologic Inc./Cancer Research
Tricia Lively	Research Scientist	Marin Biologic Inc./Cancer Research
Tien Nguyen	Research Scientist	Marin Biologic Inc./Cancer Research
Carol Peplinski	Office Manager	Marin Biologic Inc./Cancer Research
Peter Ralph	Research Scientist	Marin Biologic Inc./Cancer Research
James Salach	Research Scientist	Marin Biologic Inc./Cancer Research
Krystal Sanzda	Research Scientist	Marin Biologic Inc./Cancer Research
Ben Schooler	Research Scientist	Marin Biologic Inc./Cancer Research
Melissa Wong	Research Scientist	Marin Biologic Inc./Cancer Research
Valerie Zacny	Research Scientist	Marin Biologic Inc./Cancer Research
Matt Ashby	Research Scientist	TAXON/Microbial Diversity
Kimmerly Cook	Research Scientist	TAXON/Microbial Diversity
Dago Dimster-Denk	Research Scientist	TAXON/Microbial Diversity
Ulrika Lidstrom	Research Scientist	TAXON/Microbial Diversity
Patrick Mulroy	Research Scientist	TAXON/Microbial Diversity
Melena Price	Research Scientist	TAXON/Microbial Diversity
Savanna Baker-Leyva	Student Assistant	TAXON/Microbial Diversity

6. Extent of student and faculty participation from other CSU campuses or universities and extent of participation by industry and non-governmental organizations

Names and Affiliations of Off Campus Co-Principal Investigators

David Ainley, H.T. Harvey & Associates
 Jim Anderson, University of Washington
 Paul Angermeier, Virginia Tech
 Anna Armitage, Texas A & M at Galveston
 Barney Balch, Bigelow Marine Laboratory
 Richard Barber, Duke University
 Natasha Belfiore, University of California, Berkley
 Bill Bennett, University of California, Davis
 Birgitta Bergman, Botanical Institute, Stockholm University
 Chuck Birkland, University of Hawaii
 Paul Bissett, Florida Environmental Research Institute
 Alexander Bochdansky, Old Dominion
 Loo Botsford, University of California, Davis
 John Bruno, University of North Carolina at Chapel Hill
 Mark Brzezinski, University of California, Santa Barbara
 Ann Bucklin, University of Connecticut
 J.R. Burau, United States Geologic Survey
 David Burdige, Old Dominion University
 Douglas Capone Wrigley Institute for Environmental Science, University of Southern California
 John Colburne, Indiana University
 Craig Cary, University of Delaware
 Fei Chai, University of Maine
 Denise Champlin, NHEERL EPA
 Jim Cloern, United States Geologic Survey
 Kenneth Coale, Moss Landing Marine Laboratory
 Victoria Coles, University of Maryland

Laurie Connell, University of Maine
Curt Collins, Naval Postgraduate School
Allegra Congelosi, NEMWI
Michael Conner, San Francisco Estuary Institute
Jeff Cordell, University of Washington
Mitchell Craig, California State University East Bay
Greg Crawford, Humboldt State University
Jeff Crooks, Tijuana River National Estuarine Research Reserve
Carolyn Currin, NOAA/NOS, Beaufort, North Carolina
Susan de la Cruz, U.S. Geological Survey
Ed Dever, Oregon State University
Claudio DiBacco, Dalhousie University
Clive Dorman, University of California, San Diego
Ellen Druffel, University of California, Irvine
Robert Dudley, University of California, Berkeley
J. Emmett Duffy, Virginia Institute of Marine Sciences
Rusty Fairey, Moss Landing Marine Laboratory
Peggy Fong, University of California, Los Angeles
Mark Fonseca, NOAA/NOS, Beaufort, North Carolina
Mike Foreman, Institute of Ocean Sciences, Canada DFO
John Gaskin, US Department of Agriculture
Patricia Gilbert, University of Maryland
Marta Gomez-Chiarri, University of Rhode Island
Ed Gross, Bay Modeling
Mark Hahn, Woods Hole Oceanographic Institution
Allan Hastings, University of California, Davis
M. Healey, University of British Columbia
Sharon Herzka, Centro de Investigacion Cientifica y de Educacion Superior de Ensenada
Barbara Hickey, University of Washington
J.T. Hollibaugh, University of Georgia
Raleigh Hood, University of Maryland
Margaret Hughes, University of California, Santa Cruz
Silvia Ibarra Obando, Centro de Investigacion Cientifica y de Educacion Superior de Ensenada
Zachary Hymanson, Department of Water Resources
Seibel Karchner, Woods Hole Oceanographic Institution
Heather Kerkering, Central and Northern California Ocean Observing System (CeNCOOS)
Noah Knowles, United States Geologic Survey, Menlo Park
G.M. Kondolf, University of California Berkeley
Raphael Kudela, University of California, Santa Cruz
Isao Kudo, Hokkaido University
Dietmer Kultz, University of California, Davis
Rikk Kvitek, California State University Monterey Bay
Mike Landry, Scripps Institution of Oceanography
John Largier, University of California, Davis
Evelyn Lessard, University of Washington
Lisa Levin, Scripps Oceanographic Institute
Erika Lindqvist, Joint Genome Institute
Erica McFee-Shaw, Moss Landing Marine Laboratory
George McManus, University of Connecticut
Monica Medina, University of California, Merced
Eric Mellink, Centro de Investigacion Cientifica y de Educacion Superior de Ensenada
Mark Moline, California Polytechnic University, San Luis Obispo
Stephen Monismith, Stanford University
Joe Montoya, University of Georgia
Jeff Mount, University of California, Davis
Peter Moyle, University of California, Davis
Diane Nacci, NHEERL EPA

Karina Nielson, Sonoma State University
David Nelson, Oregon State University
Peggy Olofson, Coastal Conservancy
Jeff Paduan, Naval Postgraduate School
Stephen Palumbi, Stanford University
Angela Pena, Institute of Ocean Sciences, Canada DFO
Rick Pieper, California State University Long Beach
Mark Page, University of California, Santa Barbara
Stephen Ramp, Monterey Bay Aquarium Research Institute
Betsey Real, California State University, San Marcos
Denise Reed, University New Orleans
Don Reed, San Jose State University
Jeff Robinson, Humboldt Bay Harbor District
Jan Roletto, Gulf of the Farallones National Marine Sanctuary
Kenny Rose, Louisiana State University
Greg Ruiz, Smithsonian Environmental Research Center
Ted Smayda, University of Rhode Island
Frank Shaughnessy, Humboldt State University
Jonathon Sharp, University of Delaware
Rebecca Shipe, University of California, Los Angeles
Geroge Somero, Stanford University
Robert Spies, Applied Marine Sciences
M.T. Stacey, University of California, Berkeley
Ajit Subramaniam, LDEO
Sheh May Tam, University of California, Davis
Misaki Takabayashi, University of Hawaii
Shigenobu Takeda, University of Tokyo
Janet Thompson, United States Geologic Survey
Rick Thomson, Institute of Ocean Sciences, Canada DFO
Robert Toonen, University of Hawaii
Theresa Talley, University of California, Davis
Vera Trainer, Northwest Fisheries Science Center, NOAA
Paul Treguer, University of Brest
Chuck Trees, San Diego State University
Charles Trick, University of Western Ontario
Atsushi Tsuda, Ocenat Research Institute, University of Tokyo
Mark Wells, University of Maine, University of California, Santa Cruz
Christine Whitcraft, California State University, Long Beach
Sandy Wyllie-Echeverria, University of Washington
Dick Zimmerman, Old Dominion University

7. List of publications developed by the unit, including books, journal articles, and reports and reprints issued under its own covers, showing author and title.

Peer-Reviewed Publications by RTC Research Scientists: 2006-2007

- Armitage, A. R., K. E. Boyer, R. R. Vance, and R. F. Ambrose. 2006. Restoring assemblages of salt marsh halophytes in the presence of a rapidly colonizing dominant species. *Wetlands* 26(3):667-676.
- Bouley, P.B. and W.J. Kimmerer. 2006. Ecology of a highly abundant, introduced cyclopoid copepod in a temperate estuary. *Marine Ecology Progress Series* 324:219-228.

- Dugdale, R.C., F.P. Wilkerson, V.Hogue. and A.Marchi . 2006. Nutrient controls on new production in the Bodega Bay, California, coastal upwelling plume. Deep-Sea Research II 53: 3049-3062.
- Fisler, S. and Talley, D.M. 2006. "Sea" the future of science: combining research, education, and outreach in Baja California. *Current: The Journal of Marine Education* 22(1): 2-8.
- Foster, R.A., E.J. Carpenter & B. Bergman. 2006. Unicellular cyanobionts in open ocean dinoflagellates, radiolarians and tintinnids: ultrastructural characterization and immuno-localization of nitrogenase and phycoerythrin. *J. Phycol.* 42:453-463.
- Foster, R.A., J.L. Collier & E.J. Carpenter. 2006. Reverse transcription-PCR amplification of cyanobacterial symbiont 16S rRNA sequences from single non-photosynthetic eukaryotic marine planktonic host cells. *J. Phycol.* 42:243-250.
- Gross, E.S., M.L. MacWilliams, and W. Kimmerer. 2006. Simulating Periodic Stratification in San Francisco Bay. *Proceedings of the Estuarine and Coastal Modeling Conference, ASCE*, pp.155-175.
- Hickey, B., A. MacFadyen, W.P. Cochlan, R.M. Kudela, K. Bruland, and C.R. Trick. 2006. Evolution of water column physical, chemical and biological properties in the Pacific Northwest following the delayed onset of local upwelling. *Geophys. Res Lett.* 33: L22S02.
- Kimmerer, W.J. 2006. Response of anchovies dampens foodweb responses to an invasive bivalve (*Corbula amurensis*) in the San Francisco Estuary. *Marine Ecology Progress Series* 324:207-218.
- Kudela, R.M., W.P. Cochlan, T.D. Peterson, and C.G. Trick. 2006. Impacts on Phytoplankton Biomass and Productivity in the Pacific Northwest During the Warm Ocean Conditions of 2005. *Geophys. Res Lett.* 33: L22S06.
- Lassiter, A.M, F. Wilkerson, R.Dugdale and V. Hogue. 2006. Functional phytoplankton groups in the CoOP_ West upwelling region: the Chaeteoceros complex. Deep-Sea Research II 53: 3063-3077.
- Largier J.L, C.A Lawrence, M. Roughan, D.M. Kaplan, E.P. Dever, C.E. Dorman, R.M. Kudela, S.M Bollens, F.P. Wilkerson, R.C. Dugdale, L.W. Botsford, N Garfield, B. Kuebel-Cervantes, D. Koracin. 2006. WEST: a northern California study of the role of wind-driven transport in the productivity of coastal plankton communities. Deep-Sea Research II 53: 2833-2849.
- Stillman, J. H., K. S. Teranishi, A. Tagmount, E. A. Lindquist and P. B. Brokstein (2006). "Construction and characterization of EST libraries from the porcelain crab, *Petrolisthes cinctipes*." *Integrative and Comparative Biology* 46(6): 919-930.
- Talley, D.M., Huxel, G.R., and Holyoak, M. 2006. Habitat Connectivity at the Land-Water Interface. *In: Sanjayan, M. and Crooks, K. [Eds], Connectivity in Conservation.* Cambridge University Press.
- Wilkerson, F.P. R.C. Dugdale, A. Marchi, V. Hogue, A. Lassiter. 2006. The phytoplankton bloom response to wind events and upwelled nutrients during the CoOP-WEST study. Deep-Sea Research II 53: 3023-3048
- Armstrong Howard, M.D., W.P. Cochlan, N.C. Ladizinsky, and R.M. Kudela. 2007. Nitrogenous preference of toxigenic *Pseudo-nitzschia australis* (Bacillariophyceae) from field and laboratory experiments. *Harmful Algae* 6: 206-217.
- Dugdale, R.C., F. P. Wilkerson, F.Chai, R. Feely. 2007 Size fractionated nitrogen uptake measurements in the Equatorial Pacific and confirmation of the low Si-high nitrate low chlorophyll condition. Global Biogeochemical Cycles, 21, No2 GB2005, doi: 10:1029/2006GB002722

- Eberl, R. & E.J. Carpenter. 2007. *Macrosetella gracilis* (Harpacticoida) uses the cyanobacterium *Trichodesmium* spp. as a floating substrate but not as a major food source. *Marine Ecology Progress Series* 333:205-212.
- Eberl, R., S. Cohen, F. Cipriano, and E.J. Carpenter. 2007. Genetic diversity and population structure of the pelagic harpacticoid copepod *Macrosetella gracilis* on rafts of the bloom-forming cyanobacterium *Trichodesmium* spp. *Aquatic Biology* 1:33-43.
- Foster, R.A., D.G. Capone, E.J. Carpenter, C. Mahaffey, A. Subramaniam, & J.P. Zehr. 2007. Influence of the Amazon River plume on free-living and symbiotic cyanobacteria in the Western Tropical North Atlantic Ocean. *Limnol. & Oceanogr* 52:517-532.
- Herndon, J., and W.P. Cochlan. 2007. Nitrogen utilization by the raphidophyte *Heterosigma akashiwo*: growth and uptake kinetics in laboratory cultures. *Harmful Algae* 6: 260-270.
- Kimmerer, W.J., A.G. Hirst, R.R. Hopcroft, and A.D. McKinnon. 2007. Measurement of juvenile copepod growth rates: corrections, inter-comparisons and recommendations. *Marine Ecology Progress Series* 336:187-202.
- Shipe, R. F., E.J. Carpenter S. Govil, and D.G. Capone. 2007. Limitation of phytoplankton production by Si and N in the western Atlantic Ocean. *Mar. Ecol. Prog. Ser.* 338:33-45.
- Sommer, T., C. Armor, R. Baxter, R. Breuer, L. Brown, M. Chotkowski, S. Culberson, F. Feyrer, M. Gingras, B. Herbold, W. Kimmerer, A. Mueller-Solger, M. Nobriga, and K. Souza. 2007. The collapse of pelagic fishes in the upper San Francisco Estuary. *Fisheries* 32(6):270-277.
- Teranishi, K. S. and J. H. Stillman (2007). "A cDNA microarray analysis of the response to heat stress in hepatopancreas tissue of the porcelain crab *Petrolisthes cinctipes*." *Comparative Biochemistry and Physiology Part D Genomics & Proteomics* 2(1): 53-62.
- Trainer, V.L., W.P. Cochlan, A. Erickson, B.D. Bill, F.H. Cox, J.A. Borchert and K.A. Lefebvre. 2007. Recent domoic acid closures of shellfish harvest areas in Washington State inland waterways. *Harmful Algae* 6: 449-459.

Non-Peer Reviewed Publications By RTC Research Scientists: 2006-2007

None Reported

8. Sources and amounts of income including contracts and grants, gifts, University support, service agreements, and income from other services and expenditures from all sources of support funds, distinguishing use of funds for administrative support, direct research and other specified uses.

RTC OPERATING BUDGET Fiscal Year 2006-2007

Revenue:

	Actuals
University Allocation	\$ 1,350,020
<i>Other Earned Income</i>	
Bay Conference Center (BCC) & Ohrenschnall Guest Center (OGC)	\$ 63,953
Property Leases	\$ 104,258
RRT	\$ 180,561
Research Vessels	\$ 59,137
Chargeback, Refunds	\$ 79,691
Total Revenues	\$ 1,837,620

Expenses:

Salaries Paid by RTC Allocation	\$ 518,690
Benefits Paid by RTC Allocation	\$ 168,531
Administrative Fees Paid to SFSU	\$ 13,192
Administrative Fees Paid to SFSUFI	\$ 37,797
BCC & OGC Expenses	\$ 52,459
Marine Operations (Questuary, Insurance, etc)	\$ 198,765
Telephones (Campus, Centrex, Cell)	\$ 55,157
Utilities (sec, garbage, water, pest, elec, etc.)	\$ 82,552
Vehicles (Gas/service/leases)	\$ 37,962
Start-Up (Boyer, Cohen, Komada, Stillman, Carpenter)	\$ 86,781
Matching Funds to Grants	\$ 16,035
Services, Supplies, Equipment, Post, Print, PCs, P-cards	\$ 253,852
Facilities - Maint/Repair/tools, etc	\$ 30,357
Lab/Safety/Health - Services, Equipment, Furniture	\$ 29,202
Site Engineering and maintenance	\$ 81,975
Total Expenses	\$ 1,663,307

Net Surplus (Deficit)	\$174,313
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(1) Does **not** include General Fund Salaries and benefits paid by COSE

(1) **Does** include *Unbudgeted* salaries and benefits for 1/2 year for 4 research faculty

9. Description, location, and amount of space currently occupied at the Romberg Tiburon Center.

Building Number	Building Name	Square Footage	Area to be Occupied	Usage	Occupants
20	Ohrenschall Guest Center	3,600	All	Residence	Visitors
36	Research Center	27,200	All	Research Laboratories, Offices, Meeting Rooms, Classrooms, & Rental Space	RTC, NERR & Lease to Weston Solutions Inc. (4976 sq ft or 18%)
39	Administration Office	7,080	All	Offices, Classrooms, & Rental Space	RTC, NERR, & Lease to Marin Biologic Lab (1920 sq ft or 27%)
49	Maintenance Shop/Marine Operations	16,925	All	Facilities, Marine Operations, Offices & Art Department Student Studios	RTC & SFSU
50	Storage	16,925	All	Storage, Laboratory & Anthropology Department Archives	RTC & SFSU
53	Bay Conference Center/ Residence	7,700	All	Conference Center, Office & Caretaker Apt	RTC & Conference Rentals
30	Galley/ Admin Office	8453	All	Offices, Meeting Rooms, & Laboratories	RTC & Lease to Taxon (1,278 sq ft or 15%) & SERC (460 sq ft or 5%)
54	Physiology Laboratory	7600	All	Offices & Research Laboratories	RTC/Lease - Lobster Farms International Inc. (396 sq ft or 5%)
74	Vehicle Warehouse	2000	All	Boat & Vehicle Storage & Office	RTC
74A	Offices	648	All	Offices	RTC
86	Central Warehouse	11,000	All	Storage	NOAA
Unoccupied buildings				Proposed Usage	
11	Caretaker Residence	2705	All	Residence	RTC
21	Machine Shop	3780	All	Marine Operations	RTC
22	Blacksmith Shop/ Carpentry Shop	3644	All	Marine Operations/Museum	RTC
33	Rockfish Research Laboratory	4018	All	Student Dormitory	RTC
37	Dispensary	2000	All	Student Dormitory	RTC

10. Any other information deemed relevant to documentation of an RSO's achievements

A. CURRENT AWARDS

RTC GRANTS

Research Scientist	Funding Source/ Award Duration (yrs)	Proposal Title	Expenses Against Grants
Alissa Arp	NSF 9/15/02-8/1/07	My Place by the Bay (subcontract with the Bay Area Discovery Museum)	\$0
	SF Bay and Conservation and Development Commission 5/5/04-6/30/06	SF Bay NERR HQ Water Development	\$10,075
w/ Cochlan	U.S. Department of Education 10/1/04-9/30-06	Special MSEIP: Project Transquest: A Field Experience for Minority Students	\$0
Stephen Bollens w/ 4 co-PIs	CALFED 1/1/03-12/31/06	Integrated Regional Wetlands Monitoring: II: Fishes, Invertebrates, Primary Production and Nutrients	\$150,401
Katharyn Boyer	NOAA 3/1/06-2/28/07	Restoring the Seagrass, <i>Zostera marina</i> L. in San Francisco Bay: Experimental Evaluation of a Seeding Technique	\$36,440
w/2 co-PIs	NOAA/CICEET 9/1/05-8/31/08	Evaluating Buoy-Deployed Seeding for Restoration of Eelgrass (<i>Zostera marina</i>) in San Francisco Bay	\$96,563
w/2 co-PIs	CA Coastal Conservancy 4/1/06 – 4/1/08	Monitoring and Experimentation to Support Eelgrass Restoration in San Francisco Bay	\$43,640
	U.S. EPA 9/1/04-8/31/06	EPA STAR Fellowship FY06/07 (Brittany Huntington)	\$6,035
	Coastal Conservancy 8/1/06-2/28/07	Aquarium Evaluation	\$20,812
	NOAA 6/1/07-9/30/07	Test Plots Eelgrass Restoration	\$0
Edward Carpenter	NSF 1/26/03-6/30/07	Bio-complexity Collaborative Research: N2 Fixation & Global Climate	\$32,335
	NSF 1/1/04-6/30/07	Bio-complexity Collaborative Research	\$40,682
	CALFED 1/1/03-12/31/06	IRWM Program	\$631
	CALFED 4/16/07-4/15/10	Bad Suisun	\$0
	CBDA 1/1/06-12/31/08	Foodweb Support for the Threatened Delta Smelt	\$47,572
Sarah Cohen w/ 4 Co-PIs	NSF 11/1/04-10/31/08	Genetic Data Collection Capability for the Romberg Tiburon Center	\$3,217
	NSF 11/1/04-10/31/08	C/S Genetics Data Collection	\$11,621
	CA State Coastal Conservancy 4/1/06-4/1/08	Eelgrass Planning	\$10,233
	NOAA/University of New Hampshire 9/1/05 – 8/31/08	NOAA CICEET	\$7,417

	NOAA 7/1/06-6/30/08	Spread of Invasive Botryllids	21,308
	SFSU 7/1/06-6/30/08	Match for Spread of Invasive Botryllids	\$0
William Cochlan	NOAA/NSF 10/1/03-11/30/07	ECOHAB PNW: The Ecology and Oceanography of Toxic <i>Pseudo-nitzschia</i> in the Northeast Pacific	\$154,532
	U.S. Dept. of Energy 8/14/04-8/14/07	The Effects of Fe(III)-Complexing Ligands on the Long-Term Ecosystem Response to Iron Enrichment of HNLC Waters	\$17,887
	NSF- Chemical Ocean 7/1/03-6/30/07	Collaborative Research: The Effect of Iron-Complexing Ligands	\$69,418
	Bay Model Association 8/1/06-7/31/08	B-WET	\$2,938
Richard Dugdale w/ Wilkerson	NSF-CoOP 11/1/03-10/31/06	CoOP The Role of Wind-driven Transport in Shelf Productivity	\$10,557
	NSF-BE 12/1/03-11/30/07	Bio-Complexity: Plankton Dynamics and Carbon Cycling in the Equatorial Pacific	\$71,536
	USC Sea Grant 3/1/05-2/28/07	Impact Of Anthropogenic Ammonium on Primary Production	\$0
	CALFED 1/1/03-12/31/06	IRWM Program	\$12,945
	CBDA 1/1/06-12/31/08	Foodweb Support for the Threatened Delta Smelt	\$86,365
	CALFED 11/1/06-10/31/08	Sea Grant (Alex Parker)	43,501
	CALFED 4/16/07-4/15/10	Bad Suisun	\$5,957
Trish Foschi w/3 PI's	CALFED Ecosystem Restoration Program 11/1/03-2/29/08	Effects of climate variability and change on the vegetation and hydrology of the Bay-Delta watershed	\$66,632
	California Integrated Waste Management Board 6/1/06-5/15/08	Satellite remote sensing of Waste Tires	\$86,911
Newell Garfield	CDFG 6/1/04-3/31/07	Integration of Satellite Imagery with Surface Current Mapping Radar in Near Real Time- Ocean Imaging	\$29,400
	University of New Hampshire 1/1/07-12/31/08	NOAA Use of HF Rada	\$0
	CA Coastal Conservancy 11/15/04-3/15/09	Coastal Ocean Circulation Monitoring Program for Central and Northern California	\$2,590,380
Wim Kimmerer	CALFED 10/1/01-3/31/07	Determining the Biological, Physical and Chemical Characteristics of Ballast Water Arriving in the San Francisco Estuary	\$65,924
	CALFED 2/2/04-12/31/07	Determining the Mechanisms Relating Freshwater Flow and Abundance of Estuarine Biota. Task 3	\$738
	CALFED 2/2/04-12/31/07	Determining the Mechanisms Relating Freshwater Flow and Abundance of Estuarine Biota. Task 4	\$15,723

w/Choi	NSF 4/1/04-2/28/07	Does Mating Success Determine Population Growth Rate at Low Abundance in Marine Copepods?	\$110,869
	San Jose State University Foundation 6/27/06-12/31/07	Coastal Plankton NIS	\$31,128
	CALFED 1/1/06-12/31/08	Foodweb Support for the Threatened Delta Smelt and other Estuarine Species in Suisun Bay and the Western Delta	\$207,285
	California Dept. of Water Resources 3/1/07-2/28/09	Zooplankton & Clam Analyses Tasks 1&2	\$0
	CALFED 1/1/07/12/31/07	Sea Grant (Lindsay Sullivan)	\$35,664
	CALFED 4/1/06-3/31/09	Modeling the Delta Smelt Population of the San Francisco Estuary	\$268,851
Tomoko Komada	NSF 10/1/06-9/30/08	Elemental Analysis Instruments	\$120,737
	Romberg Tiburon Center 10/1/06-9/30/08	Cost Share to Elemental Analysis Instruments	\$20,629
	Petroleum Research Fund, American 1/1/07-8/31-09	Sediment Doc-PRF	\$19,124
Dale Robinson	DOE 9/1/04-8/31/07	Photosynthetic Characteristics, Carbon Metabolism, & Nutrient Requirements of <i>Phaeocystis antarctica</i> & Diatom Species from Ross Sea, Antarctica.	\$5,192
	SJSU Foundation 8/1/03-7/31/07	CI-CORE	\$228,741
	NOAA 6/1/05-5/31/08	Oceanographic Product Development	\$48,545
Jonathon Stillman	NSF 5/1/05-5/31/08	Correlating Cardiac Thermal Performance Limits with Transcriptome Profiles During Thermal Acclimation of the Intertidal Porcelain Crab, <i>Petrolisthes cinctipes</i>	\$130,772
	NIH 1/1/07-12/31/07	MBRS Score Year 12/ Stillman	\$8,827
	Dept. of Water Resources 3/1/07-2/28/09	Zooplankton & Clam Analysis Task 3 Year 1	18,982
RTC Grant Expenditures FY 2006/2007*			\$5,125,672

**includes subcontracts to other institutions

NERR GRANTS

Research Scientist	Funding Source/ Award Duration (yrs)	Proposal Title	Expenses Against Grants
Jaime Kooser	NOAA 7/1/06-6/30/07	SF Bay NERR: Operations, Education and Monitoring	246,772
	COSE 7/1/06-6/30/07	Cost Match to SF Bay NERR: Operations, Education and Monitoring	\$0
	NOAA 12/1/01-11/30/06	SF Bay NERR: Construction	\$734,974
	NOAA 11/1/05-12/31/07	Reserve Manager Cochlan	\$905
	NOAA 11/1/05-12/31/07	Reserve Manager Kooser	\$30,756
Drew Talley	NOAA 3/1/07-2/29/08	Sea Grant (Christine Whitcraft)	\$15,895
NERR Grant Expenditures FY 2006/2007*			\$1,029,302

B. MASTER THESES BY RTC GRADUATE STUDENTS

** Indicates the 6 theses completed in AY 2006-2007

- Auro, Maureen – 2007 – Nitrogenous Nutrition and Toxicity of *Pseudo-nitzschia cuspidata*: A Laboratory and Field Based Experiment William Cochlan, Advisor. **
- Barada, Laila – 2006 - Nitrogen assimilation in diatoms, expression of *glnII* during eutrophication and simulated upwelling. Frances Wilkerson, Advisor.
- Bills, Jena - 2004 - Is Mid-Ocean Exchange Effective in Preventing the Invasion of Estuaries by Zooplankton from Ships' Ballast Tanks? Wim Kimmerer, Advisor
- Bogan, Mark – 1997 – Sulfide Detoxification by Catalyzed Oxidation in the Marine Worm *Urechis caupo*. Alissa Arp, Advisor
- Bouley, Paola – 2005 - The Ecology Of A Highly Abundant, Introduced Estuarine Copepod in the Low-Salinity Zone of the San Francisco Estuary. Wim Kimmerer, Advisor.
- Brey, Stacy - 2006 - Population Distriburtion and Behavior Study of Golden Gate Freshwater Turtles. Carlos Crocker, Advisor.
- Brown, Harmon – 2001- The Effects of Warm Water Intrusions on the Macrozooplankton and Micronekton of Georges Bank. Stephen Bollens, Advisor.
- Buchholz, James – 1982 – Nitrogen Flux Between a Developing Salt Marsh and South San Francisco Bay. Michael Josselyn, Advisor.
- Callaway, John -1990 – The Introduction of *Spartina alterniflora* in South San Francisco Bay. Michael Josselyn, Advisor.
- Chamberlain, Sarah – 1995 – Comparison of Methods of Control *Spartina alterniflora* in San Francisco Bay. Michael Josselyn, Advisor.
- Clay, Tansy – 2003 – Effects of Thin Layers on the Vertical Distribution of Larval Herring (*Clupea pallasii*). Stephen Bollens. Advisor
- Coffman, Gretchen – 1998 – Natural and Restored Salt Marsh Soil Seed Banks in San Francisco Bay. Michael Josselyn, Advisor.
- Cohen, Sahrye – 2006 – Growth of Native and Non-Indigenous Juvenile Fishes in Restored Versus Reference Tidal Marsh Wetlands. Stephen Bollens, Advisor.
- Cotter, Karen – 1991 – Removal of *Delairea odorata* and Recovery of Vegetation on San Francisquito Creek. Michael Josselyn, Advisor.
- De Souza, Phillip – 1981 – Lignicolous Marine Fungi of the San Francisco Bay Estuary. Michael Josselyn, Advisor.
- De Souza, Yvonne – 1981 – Relationship of Salinity to Morphological and Physiological Variation in Estuarine Populations of *Gracilaria verrucosa*. Michael Josselyn, Advisor.
- Dorman, Jeff – 2002 – Euphausiids of the Northern California Upwelling System. Stephen Bollens, Advisor
- Duffield, Joan – 1986 – Waterbird Use of an Urban Stormwater Wetland System in Central California, USA. Michael Josselyn, Advisor.
- Encomio, Vincent – 1998 – Effects of Sulfide and Hypoxia on the Respiratory Physiology of *Urechis caupo*. Alissa Arp, Advisor.
- Eberl, Renate – 2005 – *Macrosetella gracilis*: Copepod Abundance, Population-Structure and Association with the Nitrogen-Fixing Cyanobacterium *Trichodesmium*. Edward Carpenter, Advisor.
- Federline Dean, Amy - 2004 - Marshes as a Source or Sink of an Estuarine Mysid: Demographic Patterns and Tidal Flux of *Neomysis kadiakensis* at China Camp Marsh, San Francisco Estuary. Stephen Bollens, Advisor
- Fiorillo, Adele - 1994 – Effects of Crab Burrowing on Growth of *Spartina* in San Francisco Bay. Michael Josselyn, Advisor.

- Fulmer, Julia – 2004 – Ecology of Chaetognaths and Larval Hake in a Temperate Fjord (Dabob Bay, WA) Stephen Bollens, Advisor.
- Gewant, Darren – 2003 – The Distribution and Composition of Macrozooplankton and Micronekton in San Francisco Bay. Stephen Bollens, Advisor.
- Gifford, Scott – 2006 – The Ecology of Planktonic Protozoa in Restored Versus Reference Tidal Marsh Wetlands. Stephen Bollens and Gretchen Rollwagon Bollens, Co-Advisors.
- Greer, Philip – 1998 – Seed Depth, Elevation and Sedimentation Effects on *Spartina foliosa* Germination, Growth and Mortality. Michael Josselyn, Advisor.
- Grimaldo, Lenny – 2004 – Diets and Carbon Sources of Fishes from Open-water, Edge, and SAV Habitats in Restored Freshwater Wetlands of San Francisco Estuary. Wim Kimmerer, Advisor
- Harris, Holly – 2004 – Distribution and Limiting Factors of *Ostrea conchaphila* in San Francisco Bay. Mike McGowan Advisor.
- Harrison, Kateri – 2003 – Disturbance and Food-web Structure: 14 Streams in the San Francisco Bay Watershed. Neo Martinez, Advisor.
- Hernandez, John – 2000 - Blood Characteristics of the Marine Echiuran Worm *Urechis caupo*. Alissa Arp, Advisor.
- Herndon, Julian – 2003 – Nitrogen Uptake by *Heterosigma akashiwo*: A Laboratory and Field Based Study, William P. Cochlan, Advisor
- Hogue, Vickie – 2000- The Effects of Ultraviolet-B Radiation on Natural Phytoplankton Assemblages in Central San Francisco Bay. Frances Wilkerson, Advisor.
- Hooff, Rian – 2002 - Ecology of the Invasive, Predatory Copepod *Tortanus dextrilobatus*, in San Francisco Bay. Stephen Bollens, Advisor.
- Huntington, Brittany – 2006 - Is a macroalga bloom threatening seagrass survival? Responses of seagrass to increased macroalgal dominance in a northern California bay. Katharyn Boyer, Advisor.**
- Huybrechs, Catherine – 2006 - Detecting *Egeria densa* using a knowledge engine and spatio-contextual information. Patricia Foschi, Advisor.
- Ignoffo, Toni – 2004 -- Behavioral Responses of Microzooplankton to Vertical Heterogeneity (Thin Layers) in the Ocean. Stephen Bollens, Advisor.
- Johnson, Amber - 2004 –The effect of Temperature on Silicification in Diatoms. Frances Wilkerson, Advisor
- Johnson, Tessa – 2002- The Distribution and Feeding Behavior of Larval Herring in Estuarine Tidal Fronts. Stephen Bollens, Advisor.
- Kertesz, Johanna – 2006 - The role of biodiversity in a fluctuating environment. Katharyn Boyer, Advisor.
- Kieu, Le – 2004 - Seasonal Influence of Salt Marsh Plant on Methylmercury Production and Degradation over Small Spatial Scales in South San Francisco Bay. Edward Carpenter, Advisor.
- Koch, Florian –2005— Exploring the Use of ³²Si in an Urban Estuary: the Fate of Silicate in San Francisco Bay. Richard Dugdale, Advisor.
- Larsson, Brita – 1996 – A Comparative Investigation of Accretion Rates in *Spartina alterniflora* and *Spartina foliosa*. Michael Josselyn, Advisor.
- Lassiter, Adria – 2003- Spatial and Temporal Distribution of Phytoplankton Species in a Coastal Upwelling Ecosystem. Frances Wilkerson, Advisor.
- Long, Regan – 2004 – Northern California Shelf Circulation During January 2003: Possible Implications for Shelf Retention. Toby Garfield, Advisor.
- Lorenzi, Allison – 2006 - Primary Productivity and rbcL gene expression in Central San Francisco Bay. Frances Wilkerson, Advisor.
- Los Hertos, Marc – 1992 – Controls on Patterns of Seasonal Wetland Vegetation, South San Francisco Bay. Michael Josselyn, Advisor.

- Lougee, Ladd – 2000- The Effects of Haloclines on Zooplankton in San Francisco Bay. Stephen Bollens, Advisor.
- Martin, Bill –1999- Comparison of Benthic Productivity: Restored and Natural Tidal Marshes, San Francisco Bay. Michael Josselyn, Advisor.
- Martindale, Molly – 1987 – *Salicornia europa* I. and *Salicornia virginica* I. on a San Francisco Bay Salt Marsh: A Study of Factors Contributing to Their Zonation Pattern. Michael Josselyn, Advisor.
- Matsumoto, Yukari - 2004 - The Spatial Patterns and Growth Rates of an Invasive Cordgrass (*Spartina alterniflora*) and the Influences on Sedimentation in Alameda Marsh. Trish Foschi, Advisor.
- McKinnon, Rodney – 1988 – The Rotifer (*Brachionus plicatilis*) as A Vector of Nutrition in Laval Rearing. Michael Josselyn, Advisor.
- Melton, Lee – 1998 – Computer-assisted Classification of Suburban Areas in Satellite Imagery Through the Use of Artificial Neural Networks. Trish Foschi, Advisor.
- Mills, Camra – 2006- Survey and analysis of the Prevalence and Intensity of Helminth Parasite Infections in Stranded California Sea Lions (*Zalophus californianus*). Carlos Crocker, Advisor.
- Mincks, Sarah – 1998- Distribution, Abundance and Feeding of Decapods in the Arabian Sea. Stephen Bollens, Advisor.
- Murray, Alison – 1994 – Community Fingerprint Analysis – A Molecular Method for Studying Marine Bacterioplankton Diversity. James Hollibaugh, Advisor.
- Nguyen, Rosalee – 2006 - Effects of Different Substrates on Foraging Behavior and Growth Rate of larval green sturgeon, *Acipenser medirostris*. Carlos Crocker, Advisor.**
- Odaya, Mami – 2005 – Biomass Estimation of Submerged Aquatic Vegetation Using Remote Sensing and GIS Techniques, A Test Study in Sacramento-San Joaquin Delta in Northern California. Trish Foschi, Advisor.
- Papastephanou, Kathy – 2005 - Cross-shelf Distribution of Copepods in the Central California Upwelling Zone. Stephen Bollens, Advisor.
- Pearson, Jennifer, 2000. Fish and Mysids in Two Creeks/Estuary Systems in Marin County, California. Advisor Michael McGowan.
- Pence II, William – 1985 – The Effects of Saline Agricultural Drainage Effluent on the Growth of Selected Species of Estuarine Macroalgae of Northern San Francisco Bay. Michael Josselyn, Advisor.
- Perron-Burdick, Anya – 2007 - Integrated Management Techniques for the Eradication and Control of *Lepidium latifolium* (Perennial Peppergrass) in the San Francisco Estuary. Katharyn Boyer, Advisor.**
- Perez, Rick – 1981 – Salt Marsh Restoration from Former Salt Evaporators: Changes in Sediment Properties. Michael Josselyn, Advisor.
- Peterson, Heather – 2002 – Long-term Benthic Community Changes in a Highly Invaded Estuary. Wim Kimmerer, Advisor.
- Piechnik, Denise – 2002 – Food Web Assembly During a Classic Biogeographic Study: Fractions of Trophic Specialists Increase over Time. Neo Martinez, Advisor.
- Puleston, Cedric – 2003 – Structural Analyses of the Food Web of Mirror Lake, New Hampshire. Neo Martinez, Advisor.
- Purkerson, David – 2000 – Selenium in San Francisco Bay Zooplankton. Stephen Bollens, Advisor.
- Reed, Tim – 2003 – Analyzing SeaWiFS Using GIS: Phytoplankton Blooms in the Bering Sea, Dale Robinson, Advisor.
- Righetti-Judah, Linda – 2002, In progress- Phytoplankton Community Structure and Seasonal Succession in Tomales Bay, CA. Frances Wilkerson, Advisor
- Roe, Russell – 1999 – Mapping Cover Classes of *Baccharis pilularis* with Landsat TM Imagery. Trish Foschi, Advisor.
- Roepke, Troy –2001- A New Model for Sulfide Exposure Using the Nematode *Caenorhabditis elegans*. Alissa Arp,

Advisor.

- Rogoff, Dana – 2006 – Identification and Characterization of Microbes in South San Francisco Bay Solar Salt Ponds: An Application for Restoration. Edward Carpenter, Advisor.
- Sanford, Ukina- Sanford – 2006 - The Effects of Anoxia on Cardiac Output and Cerebral Blood Flow in Sliders, *Trachemys scripta*. Carlos Crocker, Advisor.
- Seto, Shelley – 1997 – Excretion of Sulfide Oxidation Endproducts in *Urechis caupo*. Alissa Arp, Advisor.
- Shellem, Bernie – 1981 – Physiological Ecology of *Entomomorpha clathrata* (Roth.) Grev. On a Salt Marsh Mudflat. Michael Josselyn, Advisor.
- Speekmann, Christa –2000 - The Effects of Ultraviolet Radiation on the Vertical Distribution and Mortality of Zooplankton. Stephen Bollens, Advisor.
- Spicher, Douglas – 1984 – The Ecology of Caespitose Cordgrass (*Spartina* sp.) Introduced to San Francisco Bay. Michael Josselyn, Advisor.
- Statile, Jennifer - 2004 – H₂S Producing Activity in Marine Invertebrate Tissues. Alissa Arp, Advisor.
- Stoltz, Gretchen - 2002 – The Biology and Natural History of *Pleurobrachia pileus* on Georges Bank, Stephen Bollens, Advisor.
- Stierwalt, Robin – 1998- Relationships Between Physiological Response and Shell Morphology in Three Species of Littorine Snails of the Central California Coast. Michael Josselyn, Advisor.
- Tirindelli, Joelle—2006—Immunogenetic Variation in Estuarine Fish from Habitats with Varying Chemical Contaminant Loads. Sarah Cohen, Advisor.**
- Vaccaro, Erin – 2003 – Structural Analyses of the Lake Tahoe Food Web. Neo Martinez, Advisor.
- Ver Steeg, Juliana – 1981 – Contributions to the Taxonomy and Morphology of *Cryptopleura* (Rhodophyta:Delesseriaceae). Michael Josselyn, Advisor.
- Visintainer, Tammie – 2003 – Community Composition and Diet of Fishes as a Function of Tidal Channel Order: A Field Study in China Camp Marsh, San Francisco Estuary. Stephen Bollens, Advisor
- Waters, Wayne G. – 1985- The Effects of Restoration/Management Projects on the Essential Habitat of Five Endangered Wildlife Species Utilizing the Grizzly Island Wildlife Area. Michael Josselyn, Advisor.
- White, Brendan – 1995 – The Shorebird Foraging Response to the Eradication of the Introduced Cordgrass, *Spartina alterniflora*. Michael Josselyn, Advisor.
- Willsie, Julia – 1999 – Sulfite and Thiosulfate are Products of Detoxification in *Urechis caupo*. Alissa Arp, Advisor.
- Wunderlich, Veronica- 2006. Effects of Elevated Temperature on Hypoxia on Growth of Age-0 Green Sturgeon, *Acipenser medirostris*. Carlos Crocker, Advisor.
- Jennifer Yorty – 2007 – Nitrogen Fixation at Six San Francisco Bay Tidal Wetlands. Edward Carpenter, Advisor.**
- Zaremba, Katie. 2002. Comparison of Native and Non-native Cordgrass and Hybrids in San Francisco Bay. Michael Josselyn, Advisor

Thesis work in Progress:

- Shaun Baesman - The Use of Tellurium Oxyanions by Anaerobic Bacteria with the Formation of Elemental Te Nanoparticles. Edward Carpenter, Advisor.
- Briggs, Allegra - Mitochondrial COI Analysis of an Invasive Copepod. Wim Kimmerer, Advisor.
- Brown, Johnathan – An Optical Characterization of the Waters of San Francisco Bay. Toby Garfield, Advisor.
- Carr, Lindsey - Food Chain Interactions in San Francisco Bay Eelgrass (*Zostera marina*) Beds: Implications for Restoration. Kathy Boyer, Advisor.

- Crumb, Esa - Mating system characteristics of two unique populations of eelgrass (*Zostera marina*) in San Francisco Bay. Sarah Cohen, Advisor.
- Drake, Jeana – Community Structure and Dynamics of Phytoplankton Blooms in Rodeo Lagoon, Golden Gate National Recreation Area. Ed Carpenter, Advisor.
- Durand, John - Population Dynamics of Calanoid Copepods in the Upper San Francisco Estuary. Wim Kimmerer, Advisor
- Glassi, Eric – Thermal influences on gene expression in the intertidal pocelain crab , *Petrolisthes cinctipes*. Jonathon Stillman, Advisor.
- Gould, Alison – Population dynamics of *Limnoithona tetraspina*: the Success of an Introduced Copepod in San Francisco Estuary. Wim Kimmerer, Advisor.
- Lew, Kevin - Methods Development to Apply the CytoSense Flow Cytometer to Evaluating Natural Phytoplankton Community Structure, Richard Dugdale, Advisor.
- Kara, Laurie – Population dynamics of Limnoithona (An Invasive Copepod) in Response to Predation by Corbula (An Invasive Clam) Within the Low Salinity Zone of the San Francisco Bay. Wim Kimmerer, Advisor.
- Kiriakopolos, Stephanie – The Role of Environment and Depth in Driving Phenotypic Variation in *Zostera marina*. Kathy Boyer Advisor.
- Lidstrom, Ulrika - Phytoplankton Identification, Primary Productivity and Ecology. Edward Carpenter, Advisor.
- Murphy, Jennifer – Salt Marsh Soil Amendments and Their Effect on **Spartina foliosa** Restoration around the San Francisco Bay. Ed Carpenter, Advisor.
- Polly, Jonathon - Organic matter degradation in anoxic marine sediments: relationship with substrate radiocarbon age. Tomoko Komada, Advisor.
- Radan, Regina - Nutrient Uptake and Toxicity of *Pseudo-nitzschia cuspidate*: A Laboratory and Field Based Experiment. William Cochlan, Advisor.
- Ryan, Amelia – Salinityh and Nitrogen Interatctions in *Sarcocornia pacifica* dominated salt marshes. Kathy Boyer, Advisor.
- Silva, Javir - Blood Catecholamine Concentrations in Green Sturgeon (*Acipenser medirostris*) During Air Exposure. Carlos Crocker, Advisor.
- Talianchich, Renny - Modeling Effects of Freshwater Flow on Estuarine Circulation and Juvenile Fish Movement. Wim Kimmerer, Advisor.

C. RTC COURSES AND ENROLLMENTS 2002-2007

COURSE	TITLE	INSTRUCTOR	UNITS	ENROLLMENT
<u>Fall '02</u>				
Biol 305	Marine Animals & Plants of the CA	Obrebski	3	14
Biol 582	Biological Oceanography	Carpenter	3	12
Biol 863	Ecophysiology of HAB	Cochlan	2	5
Geol 465	Physical Oceanography	Garfield	3	8
Art 546	Kiln Design & Construction	Downing	3	16
<u>Spring '03</u>				
Biol 502	Biology of the Algae	Wilkerson	3	5
Biol 862	Experimental Design	Obrebski	2	8
Geol 452	Coastal Processes	Garfield	3	5
<u>Summer '03</u>				
Biol 315	Introduction to Wetland Habitats	Martin	1	4
Biol 315	Introduction to Ecology of San Francisco Bay	Obrebski	1	4
Total AY 02-03 RTC Enrollment				81
<u>Fall '03</u>				
Biol 305	Marine Animals & Plants of the CA	Obrebski	3	10
Biol 582	Biological Oceanography	Bollens/ Carpenter	3	10
Biol 533/ Geog 621	GIS for Environmental Analysis	Foschi	4	14
Biol 863	Ecosystems Ecology	Wilkerson	2	11
Biol 863	Protist Ecology	Rollwagen Bollens	2	7
<u>Spring '04</u>				
Biol 395	Wetland Ecology	Boyer	3	6
Biol 863	Molecular Approaches	Cohen	2	6
Total AY 03-04 RTC Enrollment				52
<u>RTC Fall '04</u>				
Biol 582	Biological Oceanography	Carpenter	4	19
Biol 863	Marine Symbioses	Wilkerson	2	10
Geol 465/765	Physical Oceanography	Garfield	3	4

RTC Spring
'05

Biol 502	Biology of Algae	Wilkerson	3	11
Biol 534	Wetland Ecology	Boyer	4	5
Biol 863	Ecophysiology of HABs	Cochlan	2	5
Biol 863	Molecular Marine Ecology and Evolution	Cohen	2	6
Biol 863	Plankton Ecology	Carpenter	2	5
Biol 865	Environmental Physiology	Crocker	2	8
Chem 877	Marine Organic Geochemistry	Komada	3	4

RTC Summer
'05 Wetland Science Course Series
(taught through CEL)

Biol 9315	Wetland Delineation	Josselyn	4	6
Biol 9395	Wetland Restoration Ecology	Boyer	2	8
Biol 9350	Wetland Plant Identification	Vasey	2	6
Biol 9100	GIS for Wetlands	Reed	2	9

Total AY 04-05 RTC Enrollment **106**

RTC Fall '05

Biol 582	Biological Oceanography	Carpenter	4	20
Biol 863	Adaptations to Coastal Environments	Stillman	2	3
Biol 863	Ecosystems Ecology	Wilkerson	2	8
Biol 863	Molecular Marine Ecology & Evolution	Cohen	2	5

RTC Spring
'06

Biol 534	Wetland Ecology	Boyer	4	10
Biol 863	Plankton Ecology	Carpenter	2	4
Chem 677	Chemical Oceanography	Komada	3	13

RTC Summer
'06

Biol 9315	Wetland Delineation	Josselyn	1.6 CEU	13
Biol 9350	Wetland Plant Indicator Species	Vasey	1.6 CEU	14

Total AY 05-06 RTC Enrollment **90**

RTC Fall 06

Biol 582	Biological Oceanography	Carpenter	4	21
Biol 586	Marine Ecology Lab	Cohen	1	5
Biol 862	Topics in Evolution	Cohen	2	4
Biol 863	Aquatic Communities	Stillman	2	16
Biol 863	Marine Symbiosis	Wilkerson	2	10
Biol 865	Environmental Physiology	Stillman	2	8
Biol 9350	Wetland Plant Identification	Vasey	2 CEU	14

RTC Spring 07

Biol 502	Biology of the Algae	Wilkerson	3	10
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Biol 534	Wetland Ecology	Boyer	4	15
Biol 631	Animal Physiology Lab	Stillman	2	11
Biol 863	Plankton Ecology	Carpenter	2	4
Biol 833	Current RTC Research	Garfield	1	13
Chem 677	Chemical Oceanography	Komada	3	11
Biol 9001	Wetland Delineation	Coffman	4 CEU	18
Biol 9007	Ecology of Invasive Species	Boyer/Zabin	.8 CEU	11
Biol 9002	Tidal Wetland Hydrology	Kamman/ Kamman	1.6 CEU	17

RTC Summer No classes given

07

Total AY 06-07 RTC Enrollment

188

**D. COURSES AND ENROLLMENTS TAUGHT BY RTC FACULTY AND STAFF ON CAMPUS
2002 – 2007**

COURSE	TITLE	INSTRUCTOR	UNITS	ENROLLMENT
<u>Fall'02</u>				
Biol 863	Marine Symbiosis	Wilkerson	2	6
Geol 102	Intro to Oceanography	Garfield	3	32
Geog 203	Geographical Measurement	Foschi	3	26
<u>Spring '03</u>				
Geog 611	Remote Sensing Envir II	Foschi	4	15
Geol 102	Introduction to Oceanography	Cochlan	3	28
Geol 415	Computer Techniques	Garfield	2	5
Metr 200/201	Intro to Dyn/Syn Metr/Ocean	Garfield	4	15
Total AY 02-03 Enrollment				<hr/> 127
<u>Fall '03</u>				
Biol 160	Marine Biology	Cochlan	3	48
Biol 585	Marine Ecology	Niesen/Cohen	4	19
Biol 612	Human Physiology	Crocker	3	80
Biol 630	Animal Physiology	Crocker	3	50
Biol 865	Extreme Biology	Crocker	2	17

Spring '04

Biol 160	Marine Biology	Rollwagon Bollens	3	101
Biol 240	Introductory Biology	Crocker	5	137
Biol 300	Nature Study	Wilkerson	3	24
Biol 584	Marine Microbial Ecology	Carpenter	3	13
Biol 617	Advanced Topics in Physiology	Crocker	3	27
Biol 865	Extreme Biology	Crocker	2	6
Geol 107/ Meter 102	Introduction to Oceanography	Carpenter	3	54/7 = 61
Geog 611	Remote Sensing of Environment II	Foschi	4	9
Total AY 03-04 Enrollment				592

Fall '04

Biol 160	GE Marine Biology	Carpenter	3	80
Biol 160	GE Marine Biology	Obrebski	3	54
Biol 531	Restoration Ecology	Boyer	3	21
Biol 612	Human Physiology	Crocker	3	89
Biol 630	Animal Physiology	Crocker	3	42
Biol 863	Aquatic Communities	Boyer	2	9
Biol 863	Molecular Evol & Conservation	Cohen	2	19
Chem 380	Environmental Pollution	Komada	3	31

Spring '05

Biol 240	Introduction to Biology	Crocker	5	130
Biol 160	Marine Biology	Carpenter	3	145
Biol 160	Marine Biology	Cochlan	3	47
Metr 200/201	Intro to Dyn/Syn Metr/Ocean	Garfield	4	12
Metr 404	Meteor and Oceanic Observing Techniques &Systems	Garfield		12
Geog 611	Remote Sensing of Environment II	Foschi	4	17
Total AY 04-05 Enrollment				708

Fall '05

Biol 160	GE Marine Biology	Carpenter/ Cochlan	3	74
Bio 532	Restoration Ecology	Boyer	4	19
Biol 612	Human Physiology	Crocker	3	118
Biol 630	Animal Physiology	Crocker	3	36
Biol 865	Extreme Biology	Crocker	2	10
Chem 380	Environmental Pollution	Komada	3	33
Geol 102	Intro to Oceanography	Garfield	3	27

Spring '06

Biol 160	Marine Biology	Cochlan	3	130
Biol 300	Nature Study	Wilkerson	3	25
Biol 585	Marine Ecology	Cohen	3	20
Biol 630	Animal Physiology	Stillman	3	61

Metr 490	Remote Sensing for Geologists	Garfield	3	9
Total AY 05-06 Enrollment				562

Fall '06

Biol 160	Marine Biology	Carpenter	3	122
Biol 532	Restoration Ecology	Boyer	4	22
Biol 863	Aquatic Communities	Boyer	2	12
Chem 320	Modern Methods of Quantitative Chemistry	Komada	2	25
Chem 380	Environmental Pollution	Komada	3	14
Metr 200	Introduction to Oceanography	Garfield	3	16
Metr 465/765	Physical Oceanography	Garfield	3	7

Spring '07

Biol 160	Marine Biology	Carpenter	3	109
Biol 160	Marine Biology	Cochlan	3	67
Biol 585	Marine Ecology	Cohen	3	21
Biol 630	Animal Physiology	Stillman	3	65
Total AY 06-06 Enrollment				480

RTC Spring 2007 Seminar Series

Date	Speaker	Title	Host Lab
Jan 24	Matt Ashby Taxon/RTC	Understanding Microbial Community Structure and Function Through Molecular Profiles	
Jan 31	Karen Edwards RTC	Towards defining larval dispersal and population connectivity on the South East U.S. Continental Shelf	
Feb 7	Jonathon Stillman RTC	Comparative physiology meets NIH: Lessons from clam claws	
Feb 14	Tomoko Komada RTC	Age Discrimination in Marine Sediments? What Natural Radiocarbon Can Tell Us About Organic Matter Degradation	
Feb 28	John Pearse UCSC	Reproduction in the Antarctic: Paradigm Changes in the 20th Century	Stillman
Mar 14	Kevin Stierhoff NOAA	It's Hard out Here for a Fish: Trials and Tribulations During Fish Early Life Histories	Dugdale, Wilkerson
Mar 21	R. Lidstrom, J. Fuller RTC graduate students	Primary production, biomass and species composition of phytoplankton in the Low Salinity Zone of the northern San Francisco Estuary Characterizing the Carbonate system in the San Francisco Bay Estuary	
Mar 28	Anke Mueller-Solger DWR	Down in the Delta: Pelagic Organism Decline and Zooplankton Trends and Diets in the Sacramento-San Joaquin Delta	Kimmerer
Apr 18	RTC	RTC Poster Social	
Apr 25	Daniel Schneider UIUC/UCB	Using Metapopulation Theory to Control Invasive Species: The Zebra Mussel in River and Estuarine Ecosystems	Cohen
May 9	R. Radan, J. Brown RTC graduate students	TBA	
May 16	J. Faber, R. Talianchich RTC/SERC grad students	TBA	

This seminar series is funded in part by generous funding from the RTC Board Members.

