The Romberg Tiburon Center for Environmental Studies

The Romberg Tiburon Center is the only academic research facility on San Francisco Bay, and is the marine research field station of San Francisco State University

San Francisco State University's Research and Service Organization
Annual Report - October 2006

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

SAN FRANCISCO STATE UNIVERSITY

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

Selected highlights from 2005-2006:

- Grant activity at RTC remains extremely strong with just under $29,000,000 in active grants.

- The phase II renovation of Building 36 began with funding from the national Oceanic and Atmospheric Administration (NOAA), the Marin Foundation and the Keck Foundation. The renovation will provide facilities for the SF Bay NERR (National Estuarine Research Reserve), two modern classrooms, two research laboratories, office space for six faculty and administration Offices.

- Major funded projects continue to bring significant acclaim and resources to SFSU—coastal observing programs CICORE and COCMP (~9 million), CALFED (~2.2 million), NOAA restoration project (~400 K), and others.

- The first University review of RTC was conducted and returned a report which will assist in the development of a strategic plan for the campus.

- After 10 years as RTC director, Dr. Alissa Arp announced her retirement form the position. The transition to a new director is underway and Dr. Newell Garfield is serving as the Acting Director.

- The RTC seawater system underwent significant improvements that will allow much more utilization of seawater in research and teaching.

- 13 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.

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. Alissa Arp served as Director until mid June 2006, when she left RTC to accept a new academic position in Hawaii. Dr. Newell Garfield was appointed Acting Director. RTC's scientific staff consists of the Director, 9 other tenured or tenure-track faculty with appointments in home departments at SFSU, 7 research scientists, 2 professors emeritus, 6 postdoctoral associates, 12 visiting scientist, 18 research technicians, and an on-site staff of 19 persons. In AY 2005-2006 there were 8 undergraduate students, and 50 graduate students, 3 high school students, 6 student assistants, and 12 volunteers involved in laboratory research. RTC also has 33 Lessee scientists and support personnel on site.

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 -- CICORE, the Center for Integrative Coastal Observation, Research and Education; CenCOOS, Central California Ocean Observing Systems; and COCMP 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 05-06 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 13 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 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 05-06. 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 its staff salaries and non-personnel supplies and expense; and a special trust account based upon activities that bring in indirect cost return (RIC) revenues to SFSU provides our operating account. The RTC University operating budget reimburses several accounts held at the SFSU Foundation including an operating account (staff salaries, supplies, and renovations), The Bay Conference Center and Orenschall Guest Center, and the account for the RTC research vessel, the *R/V Questuary*. Private donations received by RTC are also held at the SFSU Foundation and in FY 05-07 these funds were used to support student travel and scholarship, facilities improvements, and renovations. Funding amounts including total grant

monies received by RTC PIs are shown below for fiscal years 2001 through 2006, and the fiscal year budget is presented in items #8 and #9. There were 76 active grants, 16 were started during 2005-2006.

RTC TOTAL REVENUES 2000-2005

Category	FY 01-02	FY 02-03	FY 03-04	FY 04-05	FY 05-06
SFSU allocation	$511,367	$770,529	$1,053,148	1,167,133	1,190,472
COSE Salary Support	$699,367	$417,644	$473,314	$474,706	478,749
COSE Supplies & Expense	$23,541	0	0	-21,041	0
SFSU Facilities Support/budget cuts	$35,000	0	0	0	0
SFSU support subtotal	**$1,269,275**	**$1,188,173**	**$1,526,462**	**$1,620,798**	**$1,669,221**
BCC/Tiburon Properties Revenue	$184,566	$191,363	$196,076	$199,703	203,690
Questuary Revenue	$27,453	$28,950	$22,409	25,000	54,491
Subtotal	**$1,481,294**	**$1,408,486**	**$1,858,932**	**$1,845,501**	**$1,927,402**
Private Donations	$11,150	$97,307	$31,995	60,500	150,328
Private Foundation Awards	$610,000	$859,000	$5,000	150,000	0
Subtotal w/ donations & awards	**$2,102,444**	**$2,364,793**	**$1,895,927**	**$2,056,001**	**$2,077,730**
Grant Awards to RTC PIs	$16,009,276	$24,326,733	$33,079,274	$33,389,489	$29,536,431
TOTAL REVENUE	**$18,111,720**	**$26,691,526**	**$34,975,201**	**$35,445,490**	**31,614,161**

SUMMARY OF APPENDED DATA

Category	2001-2002 Total Number	2002-2003 Total Number	2003-2004 Total Number	2004-2005 Total Number	2005-2006 Total Number
RTC enrollments	108	81	52	101	76
Campus enrollments for RTC faculty	143	127	592	713	562
Peer reviewed publications	78	79	87	76	30
Non peer reviewed publications	20	26	17	12	2
Research funds awarded	$16,009,276*	$24,326,733*	$33,143,042*	$33,389,489*	$29,536,431*
Grant Expenditures					$4,598,923*
Resident PhD level scientists	16	18	19	21	19
Postdoctoral Associates	8	8	6	4	6
Visiting Scientists	1	2	1	6	12
Research Technicians	23	37	27	25	18
Graduate Students (includes art students)	33	53	35	38	50
Undergraduate Students	10	10	8	3	8
High School Students	3	7	3	3	3
Interns	3	4	7	4	0
Student Assistant/Undergraduate	0	1	7	13	6
Volunteers	3	3	5	10	12
Staff	9	10	14	13	23
Theses Completed by RTC Students (total to date)	47	54	61	70	83

*includes subcontracts to other institutions

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

ROMBERG TIBURON CENTER
BOARD OF DIRECTORS
2005-2006

Chairman of the Board: Hank Broderick
Vice Chairman: Bob Ohrenschall
Executive Secretary: Dr. Sheldon Axler
Director: (Alissa J. Arp), Newell Garfield

Name/E-mail	Committee Assignment	Affiliation/Business
Howard Allen Hallen8644@aol.com	Advancement Committee	Belvedere Land Company
Alissa Arp, Ph.D. aarp@sfsu.edu		Director Romberg Tiburon Center
William Atchley, M.D. wmatchley@comcast.net	Education Committee	Retired Physician
Sheldon Axler, Ph.D. axler@sfsu.edu	Advancement Committee	San Francisco State University
George Brewster george@kiwi-properties.com	Nominating Committee	Kiwi Properties
Henry "Hank Broderick hbroderick@sbcglobal.net	Government Affairs Committee	Retired Marin Co. Superior Court Judge
Dr. Margaret "Meg" Burke mburke@calacademy.or	Education Committee	California Academy of Sciences
Margaret A. Elliott Melliott18@comcast.net	Educational Outreach	College of Marin
Dr. Toby Garfield garfield@sfsu.edu	Government Affairs Committee	Assoc Professor of Geology/SFSU
Dr. Terrence Gosliner tgosliner@calacademy.org	Education Committee	California Academy of Sciences
Robert Heller HRHeller@comcast.com	Advancement Committee	Federal Reserve Board
Deborah Hoke Smith deborahhokesmith@bankofmarin.com	Advancement Committee	Bank of Marin
Dr. Millie Hughes-Fulford Milliehf@aol.com	Education Committee	Medical Principal Investigator Retired NASA Astronaut
Russell D. Keil, Jr. russkeil@pacbell.net	Advancement Committee	Keil Estate Management Co.
Dr. James Kelley jkelley@sfsu.edu	Education Committee	Retired SFSU College of Science & Engineering Dean

John H. Kern jkern@ci.tiburon, ca.us	Facilities Support	Professional Engineer
Don Lollock Dlollock@aol.com	Nominating Committee	BCDC/Retired from California Department of Fish and Game
Dr. John Northwood ejn@ejnorthwood.com	Education Committee	Northwood and Associates Geophysicist
Robert Ohrenschall bobohren@sbcglobal.net	Advancement Committee	Emeritus Addison Design (formerly Soyster & Ohrenschall, Inc.)
Dr. Mark D. Reynolds mreynolds@tnc.org	Government Affairs Committee	The Nature Conservancy
Dr. Thomas Spencer tspencer@sfsu.edu	Education Committee	SFSU Professor of Psycology
Bud Spiesberger Basie@sbcglobal.net	Advancement Committee	Piper Jaffray
Ann Stephens	Nominating Committee	Compton Foundation
Dr. Ed Ueber Ed_ueber@parner.nps.gov	Education Committee	Gulf of the Farallones/Cordell Bank
Effie Westervelt fewest@pacbell.net	Advancement Committee	
James G. Wilson, AIA jwilson@marink12.ca.us	Facilities Support	Architect (AIA)/Professional Engineer
Laila Barada lbarada@sfsu.edu	Student Representative	SFSU/RTC Graduate Student
Paul Donahue pdonahue@sfsu.edu	Ex-Officio	SFSU Development Office
Dr. Jaime Kooser jkooser@sfsu.edu	Ex-Officio	Director SF Bay NERR
Adria O'Dea adrial@sfsu.edu	Ex-Officio	RTC Outreach Coordinator
Raman Paul ramanp@sfsu.edu	Ex-Officio	RTC Administrative Coordinator

Name/E-mail	Committee Assignment	Affiliation/Business
Sarane Bowen stbowen@sfsu.edu	Honorary Board Member	Retired SFSU Professor
Randy Brown rl_brown@pacbell.net	Honorary Board Member	
William Devoren	Honorary Board Member	
Phyllis Faber	Honorary Board Member	
Marty Griffin	Honorary Board Member	Physician
Bettina Hughes bhughes@marin.k12.ca.us	Honorary Board Member	Educator
Gabriella Isaacson	Honorary Board Member	
Mike Josselyn josselyn@wra-ca.com	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 furwest@aol.com	Honorary Board Member	
David Werdegar dwerdegar@aol.com	Honorary Board Member	

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

Alissa J. Arp, Marine ecological physiologist; investigates how organisms cope with hypoxia and toxic conditions in estuaries and on the ocean floor.

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

Stephen Bollens, Biological oceanographer; studies behavioral ecology, population biology, and community ecology of zooplankton and larval fishes.

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.

Carlos Crocker, Comparative Physiologist; studies ecophysiology of hypoxia-tolerant ectothermic vertebrates (fish and turtles in particular).

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

Patricia G. Foschi, 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.

Michael N. Josselyn (Emeritus), Wetlands Ecologist; conducts wetland restoration and enhancement projects in coastal wetland ecosystems.

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.

Visiting Scientists:

Kelly Agnew, Hendrix College – Estuarine Fish Evolution

Andrew Chang, University of California, Davis – Invasive Species Research

Kelly Lee, Smithsonian Institute – Invasive Species Research

George McManus, University of Connecticut – Delta Smelt Foodweb Research

Stephen Obrebski – Professional Wetlands Series

Greg Rau, University of California Santa Cruz – Invasive Species Research

Donald Reed, San Jose State University – Physical Oceanography Research

Gretchen Rollwagon Bollens, Washington State University - Zooplankton Research

Gregory Ruiz, Smithsonian Institute - Invasive Species Studies Research

Kimberley Schneider, University of Southern Carolina – Invasive Species Research

Heidi Weiskel, University of California, Davis – NERR Graduate Research Fellow

Joanna York – University of Connecticut – Delta Smelt Foodweb Research

4. 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.

Staff Member	Status	Research Field/Role
Debbie Marcal	Graduate Student	Aquatic Toxicology
Paul Ward	Graduate Student	Aquatic Toxicology
Sean Avent	Research Technician	Bio. Oceanography/Zooplankton
Darren Gewant	Research Technician	Bio. Oceanography/Zooplankton
Sahrye Cohen	Graduate Student	Bio. Oceanography/Zooplankton
Scott Gifford	Graduate Student	Bio. Oceanography/Zooplankton
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
Florian Koch	Graduate Student	Bio Oceanography/Phytoplankton
Kevin Lew	Graduate Student	Bio Oceanography/Phytoplankton
Allison Lorenzi	Graduate Student	Bio Oceanography/Phytoplankton
Scout Mac Eachron	High School Student	Bio Oceanography/Phytoplankton
Wilson McKerrow	High School Student	Bio Oceanography/Phytoplankton
James Fuller	Volunteer	Bio Oceanography/Phytoplankton
Amy Kleckner	Volunteer/Undergraduate	Bio Oceanography/Phytoplankton
Mark Anderson	Undergraduate Student	Chemical Oceanography
Corin Dorfmeier	Undergraduate Student	Chemical Oceanography
Ramiz Mogannam	Undergraduate Student	Chemical Oceanography
Yanni Zhou	High School Student	Chemical Oceanography
Dr. Abderrahmane Tagmount	Post Doc	Eco Physiology
Eric Galassi	Graduate Student	Eco Physiology
Beth Moore	Graduate Student	Eco Physiology

Kristen Teranishi	Graduate Student	Eco Physiology
Diana Baldwin	Undergraduate Student	Eco Physiology
Morrigan Shaw	Undergraduate Student	Eco Physiology
Uriah Giles	Volunteer	Eco Physiology
Dr. Keun-Hyung Choi	Post Doc	Estuarine Zooplankton Ecology
Toni Ignoffo	Research Technician	Estuarine Zooplankton Ecology
Debbie Marcal	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
Renny Talianchich	Graduate Student	Estuarine Zooplankton Ecology
Becky Quinlan	Graduate Student	Geography
Catherine, Huybrechts	Graduate Student	Geography
Dr. Risa Cohen	Post Doc	Marine Microbiology
Anne Slaughter	Research Technician	Marine Microbiology
Chris Little	Research Technician	Marine Microbiology
Shaun Baesman	Graduate Student	Marine Microbiology
Renate Eberl	Graduate Student	Marine Microbiology
Ulrika Lidstrom	Graduate Student	Marine Microbiology
Dana Rogoff	Graduate Student	Marine Microbiology
Jennifer Yorty	Graduate Student	Marine Microbiology
Colleen Carlston	Volunteer	Marine Microbiology
Jennifer Hausmann	Volunteer	Marine Microbiology
Chris Ikeda	Volunteer/Undergraduate	Marine Microbiology
Katelyn Walker	Volunteer	Marine Microbiology
Julian Herndon	Research Technician	Marine Microbiology/Oceanography
Nicolas Ladizinsky	Research Technician	Marine Microbiology/Oceanography
Maureen Auro	Graduate Student	Marine Microbiology/Oceanography
Regina Radan	Graduate Student	Marine Microbiology/Oceanography
Julia Betts	Student Assistant/Undergraduate	Marine Microbiology/Oceanography
Rachel Townsend	Student Assistant/Undergraduate	Marine Microbiology/Oceanography
Kirsten Copren	Post Doc	Marine Ecology and Evolution
Sheh May Tam	Post Doc	Marine Ecology and Evolution
Karen Alroy	Research Technician	Marine Ecology and Evolution
Molly Klein-McDowell	Research Technician	Marine Ecology and Evolution
Jeff Schinske	Graduate Student	Marine Ecology and Evolution
Joelle Tirindelli	Graduate Student	Marine Ecology and Evolution
Reef Holland	Student Assistant/Undergraduate	Marine Ecology and Evolution
Ellen Kosman	Student Assistant/Undergraduate	Marine Ecology and Evolution
Kate Bertko	Volunteer/Undergraduate	Marine Ecology and Evolution
Valerie Green	Volunteer/Undergraduate	Marine Ecology and Evolution
Patrick Lee	Volunteer/Undergraduate	Marine Ecology and Evolution
Amelia Rodelo	Volunteer/Undergraduate	Marine Ecology and Evolution
Jeff Dorman	Research Technician	Physical Oceanography
Dwight Peterson	Research Technician	Physical Oceanography
Johnathan Brown	Graduate Student	Physical Oceanography
Regan Long	Research Technician	Physical Oceanography/COCMP
Jim Pettigrew	Research Technician	Physical Oceanography/COCMP
Chris Raleigh	Research Technician	Physical Oceanography/CICORE
Stacy Brey	Graduate Student	Physiology
Tom Nguyen	Graduate Student	Physiology
Rosalee Nguyen	Graduate Student	Physiology
Ukina Sanford	Graduate Student	Physiology
Javier Silva	Graduate Student	Physiology
Karen Lee	Undergraduate Student	Physiology
Laura Reynolds	Research Technician	Wetlands Ecology
Brittany Huntington	Graduate Student	Wetlands Ecology
Johanna Kertesz	Graduate Student	Wetlands Ecology

Stephanie Kiriakopolos	Graduate Student	Wetlands Ecology
Anya Perron-Burdick	Graduate Student	Wetlands Ecology
Gavin Archbald	Student Assistant/Undergraduate	Wetlands Ecology
Courtney Cacace	Student Assistant/Undergraduate	Wetlands Ecology
Nishad Patel	Undergraduate Student	Wetlands Ecology
Siobhan Poling	Undergraduate Student	Wetlands Ecology
Gwen Santos	Volunteer/Undergraduate	Wetlands Ecology
Doreen Britton	Financial Coordinator	Administrative Staff
Pamela De Martini	Administrative Coordinator	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
Gwen Kleinert	Events/ BCC Coordinator	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
Alison Sanders	Grants Coordinator	Administrative Staff
Karin Schermerhorn	Events/BCC Coordinator	Administrative Staff
Karen Schwartz	Events/ BCC Coordinator	Administrative Staff
Karyn Scurti	Events/BCC Coordinator	Administrative Staff
Don Strickler	Computer Services	Administrative Staff
Jennifer Beggs	Administrative Coordinator	SF Bay NERR
Sarah Davies	Education Coordinator	SF Bay NERR
Tim Reed	GIS Coordinator	SF Bay NERR
Jessica Schneider	SWAMP Coordinator	SF Bay NERR
Mike Vasey	Stewardship 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.	19	11	8	17	.5	1	.5			
Post Doc	6	3	3	4		2				
Visit Scientists	12	6	6	11			1			
Research Tech	18	10	8	18						
Student Asst.	6	1	5	5.5	.5					
Grad Student	35*	10	25	28	1	4	2			
Undergrad Student	8	3	5	6		1		1		
Intern	0									
High School Student	3	1	2	2		1				
Volunteer	12	4	8	8		2	1.5	.5		
Staff	23	11	12	19	1	2		1		
Totals	142	60	82	118.5	3	13	5	2.5		

* 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.

Steven Bird	Graduate Student	Art Department
Jesse Houlding	Graduate Student	Art Department
Karrie Hovey	Graduate Student	Art Department
Bradley Hyppa	Graduate Student	Art Department
Antonios Kosmadakis	Graduate Student	Art Department
Robbyn Leonard	Graduate Student	Art Department
Benjamin Meyer	Graduate Student	Art Department
Elizabeth Rossof	Graduate Student	Art Department
Larysa Rybchyuska	Graduate Student	Art Department
Karen Schwartz	Graduate Student	Art Department
Marina Shterenberg	Graduate Student	Art Department
Daniela Steinsapir	Graduate Student	Art Department
Luna Topete	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
Basma Mohammad	Research Technician	Smithsonian (SERC)/Invasive Species
Safra Altman	Visiting Scientist	Smithsonian (SERC)/Invasive Species
Catherine Cassou	High School Student	Smithsonian (SERC)/Invasive Species
Sarikka Attoe	High School Student	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
Steve Lemothe	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
Jodie Price	Environmental Analyst	Weston Solutions/Toxicology/Bioassay
Leela Sequeria	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
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
Kathleen Shiffer	Research Scientist	Marin Biologic Inc./Cancer Research
Valerie Zacny	Research Scientist	Marin Biologic Inc./Cancer Research
Matt Ashby	Research Scientist	TAXON/Microbial Diversity
Dago Dimster-Denk	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

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

Names and Affiliations of Off Campus Co-Principal Investigators

Steve Ackley, Clarkson University
David Ainley, H.T. Harvey & Associates
John Allen, Oregon State University
P.L. Angermeier, Virginia. Tech
Anna Armitage, Texas A & M at Galveston
Kevin Arrigo, Stanford University
Carin Ashjian, Woods Hole Oceanographic Institution
Lisa Ballance, NOAA
Grant Ballard, Pt Reyes Bird Observatory
Albert-László Barabási, University of Notre Dame
Barney Balch, Bigelow Marine Laboratory
Richard Barber, Duke University
Robert Beardsley, Woods Hole Oceanographic Institution
Bill Bennett, University of California, Davis
Birgitta Bergman, Botanical Institute, Stockholm University
Peter Berrien, National Marine Fisheries Service
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 New Hampshire
J.R. Burau, United States Geologic Survey
Bob Campbell, University of Rhode Island
Douglas Capone Wrigley Institute for Environmental Science, University of Southern California
Joseph Cech, University of California, Davis
Fei Chai, University of Maine
Denise Champlin, NHEERL EPA
Gary Cheer, University of California, Davis
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
Laurie Connell, University of Maine
Jeff Cordell, University of Washington
Mitchell Craig, California State University East Bay
Greg Crawford, Humboldt State University
Kendra Daly, University of South Florida
Ed Dever, University of California, San Diego
J. DiTullio, University of South Florida
Clive Dorman, University of California, San Diego
Ellen Druffel, University of California, Irvine
J. Emmett Duffy, Virginia Institute of Marine Sciences
Ted Durbin, University of Rhode Island
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
Chris Fritsen, Desert Research Institute-Reno
Bruce Frost, University of Washington
Marta Gomez-Chiarri, University of Rhode Island
Jack Green, National Marine Fisheries Service
Fred Griffin, University of California, Davis
Mark Hahn, Woods Hole Oceanographic Institution
Allan Hastings, University of California, Davis
M. Healey, University of British Columbia
Russ Herwig, University of Washington
Barbara Hickey, University of Washington
John Hildebrand, Scripps Institute of Oceanography
Eileen Hofmann, Old Dominion University
J.T. Hollibaugh, University of Georgia
Raleigh Hood, University of Maryland
Margaret Huges, University of California, Santa Cruz
Zachary Hymanson, Department of Water Resources
David Julian, University of Florida
Sibel Karchner, Woods Hole Oceanographic Institution
Heather Kerkering, Central and Northern California Ocean Observing System (CeNCOOS)
Peter Klimely, University of California, Davis
John Klinck, Old Dominion University
Noah Knowles, United States Geologic Survey, Menlo Park
G.M. Kondolf, University of California Berkeley
Darko Korinacin, DRI
Rapheal Kudela, University of California, Santa Cruz
Rikk Kvitek, California State University Monterey Bay
Mike Landry, Scripps Institute of Oceanography
John Largier, Scripps Institute of Oceanography
Evelyn Lessard, University of Washington
Dick Limeburner, Woods Hole Oceanographic Institution
Huan Liu, Arizona State University
Larry Madin, Woods Hole Oceanographic Institution
Chris Measures, University of Hawaii
Dennis McGillicuddy, Woods Hole Oceanographic Institution
A.E. Michaels, Wrigley Institute for Environmental Sciences, University of Southern California,
Mark Moline, California Polytechnic University, San Luis Obispo
S.G. Monismith, Stanford University
Joe Montoya, University of Georgia
Dave Mountain, National Marine Fisheries Service

P.B. Moyle, University of California, Davis
D. Murphy, University of Nevada, Reno
Diane Nacci, NHEERL EPA
David Nelson, Oregon State University
Nadav Nur, Point Reyes Bird Observatory
Breck Owens, Woods Hole Oceanographic Institution
Jeff Padvan, Naval Postgraduate School
Stephen Palumbi, Stanford University
Angela Pena, Institute of Ocean Sciences, Canada DFO
T-H Peng, RSMAS
Mary-Jane Perry, University of Maine
Rick Pieper, California State University Long Beach
Denise Reed, University New Orleans
Don Reed, San Jose State Universtiy
K.A. Rose, Louisiana State University
Jeff Runge, University of New Hampshire
Frank Shaughnessy, Humboldt State University
Rebecca Shipe, University of California, Los Angeles
Si Simenstad, University of Washington
Paul Siri
Robert Spies, Applied Marine Sciences
M.T. Stacey, University of California, Berkeley
Brent Stewart, Hubbs-SeaWorld Research Institute
Ajit Subramaniam, LDEO
Barbara Sullivan, University of Rhode Island
Dakotah Swett, SFUSD
Sheh May Tam, Un iversity of California, Davis
Azadeh Tabazadeh, Stanford University
Misaki Takabayashi, University of Hawaii
J. Thompson, United States Geologic Survey
Rick Thomson, Institute of Ocean Sciences, Canada DFO
Jose Torres, University of South Florida
Dave Townsend, University of Maine
Vera Trainer, Northwest Fisheries Science Center, NOAA
Paul Treguer, University of Brest
Chuck Trees, San Diego State University
Paul Treguer, University of Brest
Charles Trick, University of Western Ontario
Cynthia Tynan, NOAA
Mark Wells, University of Maine, University of California, Santa Cruz
Nicholas Welshmeyer, Moss Landing Marine Laboratory
Peter Wiebe, Woods Hole Oceanographic Institution
Peter Wilson, LandCare Research New Zealand
Sandy Wylliw-Echeverria, University of Washington
Pam Yochem, Hubbs-SeaWorld Research Institute
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: 2005-2006

Boyer, K. E., and P. Fong. 2005. Co-occurrence of habitat-modifying invertebrates: effects on structural and functional properties of a created salt marsh. *Oecologia* 143:619-628.

Boyer, K. E., and P. Fong. 2005. Macroalgal-mediated transfers of water column nitrogen to intertidal sediments and salt marsh plants. *Journal of Experimental Marine Biology and Ecology* 321:59-69.

Bruno, J. F., K. E. Boyer, J. E. Duffy, S. C. Lee, and J. S. Kertesz. 2005 In press. Relative effects of species identity and richness on primary production in benthic marine communities. Ecology Letters.

Campbell, L. E.J. Carpenter, J.P. Montoya, A.B. Kustka, & D.G. Capone. 2005. Picoplankton community structure within and outside a Trichodesmium bloom in the southwestern Pacific Ocean. Vie et Milieu. 55:185-195.

Capone, D.G., J.A. Burns, C. Mahaffey, A.F. Michaels, J.P. Montoya, A. Subramaniam & E.J. Carpenter. 2005. Nitrogen fixation by Trichodesmium spp.: An important source of new nitrogen to the tropical North Atlantic Ocean. Global Biogeochem. Cycles, 19, p 1029.

Choi, K-H., W. Kimmerer, G. Smith, G.M. Ruiz, and K. Lion. 2005. Post-exchange zooplankton in ships ballast water coming to the San Francisco Estuary. Journal of Plankton Research 27: 707-714.

Cloern, J. E., T. S. Schraga, C. B. Lopez, N. Knowles, R. Labiosa, R. Dugdale. 2005. Climate anomalies generate an exceptional dinoflagellate bloom in San Francisco Bay. Geophysical Research Letters, vol. 32, l14608, doi:10.1029/2005GL023321.

Cohen, S., J. Tirindelli, M. Gomez-Chiarri, D. Nacci. 2006. Functional implications of major histocompatibility (MH) variation using estuarine fish populations. Integrative and Comparative Biology, published online, October 11, 2006, doi: 10.1093/icb/icl044.

Falcón, L., S. Pluvinage & E.J. Carpenter. 2005. Growth kinetics of marine unicellular N2 fixing cyanobacterial isolates in continuous culture in relation to phosphorus and temperature. Mar. Ecol. Prog. Ser. 285: 3-9.

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.

Gibson A H., B. D. Jenkins, F. P. Wilkerson, S.M. Short and J.P. Zehr. 2006. Characterization of cyanobacterial glnA gene diversity and gene expression in marine environments FEMS Microbiology Ecology 55 (3): 391-402. doi: 10.1111/j.1574-6941.2005.00050.x

Hogue, V. F.P. Wilkerson and R.C. Dugdale. Hogue, 2005 Effects of ultraviolet-B radiation on natural phytoplankton assemblages in central San Francisco Bay. Estuaries. 28: 190-204.

Hwang J., Druffel E. R. M., and Komada T. 2005. Transport of organic carbon from the California coast to the slope region: A study of $\Delta^{14}C$ and $\delta^{13}C$ signatures of organic compound classes. Global Biogeochemical Cycles, 19, GB2018, doi:10.1029/2004GB002422.

Jiang, M-S, F. Chai, R.C. Dugdale, F.P. Wilkerson, T-H Peng and R.T. Barber. 2003. A nitrate and silicate budget in the equatorial Pacific Ocean: a coupled physical-biological model study. *Deep-Sea Research II*. 50: 2971-2996.

Julian D, Statile J, Roepke T and Arp AJ. 2005. In press. Sodium nitroprusside potentiates H2S-induced contractions in body wall muscle from a marine worm. Biological Bulletin.

Kimmerer, W., D. Murphy, and P. Angermeier. 2005. A landscape-level model of the San Francisco Estuary and its watershed. San Francisco Estuary and Watershed Science [online serial]. Vol. 3, Issue 1 (February 2004), Article 2. http://repositories.cdlib.org/jmie/sfews/vol3/iss1/art2

Kimmerer, W.J. S. Avent, S. M. Bollens, F. Feyrer, L. Grimaldo, P.B. Moyle, M. Nobriga, and T. Visintainer. 2005. Variability in length-weight relationships used to estimate biomass of estuarine fishes from survey data. Transactions of the American Fisheries Society 134: 481-495.

Kimmerer, W.J. 2005. Long-term changes in apparent uptake of silica in the San Francisco Estuary. Limnology and Oceanography 50: 793-798

Kimmerer, W.J., M.H. Nicolini, N. Ferm, and C. Peñalva. 2005. Chronic food limitation of egg production in populations of copepods of the genus *Acartia* in the San Francisco Estuary. Estuaries 28: 541–550.

Komada T., Druffel E. R. M., and Hwang J. 2005. Sedimentary rocks as sources of ancient organic carbon to the ocean: An investigation through Δ14C and δ13C signatures of organic compound classes. Global Biogeochemical Cycles, 19, GB2017, doi:10.1029/2004GB002347.

Kudela, R., W.P. Cochlan, & A. Roberts. 2005. Spatial and temporal patterns of *Pseudo-nitzschia* species in central California related to regional oceanography. *In:* K.A. Steidinger, J.H. Landsberg, C.R. Tomas, & G.A. Vargo [Eds.]. Harmful Algae 2002. Florida Fish and Wildlife Conservation Commission, Florida Institute of Oceanography.

Liu, H., A. Mandvikar, and P.G. Foschi, 2005. An active learning approach to Egeria densa detection in digital imagery, in M. Kantardzic and J. Zurada (Editors), *New Generation of Data Mining Applications*, Wiley/IEEE Press, pp 189 – 210.

Margolina, T., C.A. Collins, T.A. Rago, R.G. Paquette, and N. Garfield, 2006. Intermediate level Lagrangian subsurface measurements in the northeast Pacific: Isobaric RAFOS float data, Geochem. Geophys. Geosyst., 7, Q09002, doi:10.1029/2006GC001295.

Pörtner, H.O., Bennett, A.F., Bozinovic, F., Clarke, A., Lardies, M.A., Lenski, R.E., Lucassen, M., Pelster, B., Schiemer, F., Stillman, J.H. 2006. Tradeoffs in thermal adaptation: the need for a molecular to ecological integration. Physiological and Biochemical Zoology 79(2): 295-313.

Shipe, R.F., J. Curatz, A. Subramaniam, E.J. Carpenter, & D.G. Capone. 2006. Diatom biomass and productivity in oceanic and plume-influenced waters of the western tropical Atlantic Ocean. Deep-Sea Res. I.

Takabayashi, M., F.P. Wilkerson, A. Marchi, D. Robertson, G. Griffin, L. Barada, A. Lorenzi. 2005. Response of glutamine synthetase gene transcription and enzyme activity to external nitrogen sources in the diatom, *Skeletonema costatum* (Bacillariophyceae). J. Phycology 41: 84-94.

Takabayashi, M., K. Lew, A. Johnson, A. Marchi, R. Dugdale, F.P. Wilkerson. 2006. The effect of nutrient availability and temperature on chain length of the diatom, *Skeletonema costatum*. Journal of Plankton Research 28: 831-8

Visintainer, T. A., S. M. Bollens, and C. Simenstad. Community Composition and Diet o of Fishes as a Function of Tidal Channel Order: A Field Study in China Camp Marsh, San Francisco Estuary. In Press Mar. Ecol. Prog. Ser.

Wells, M.L., C.R. Trick, W.P. Cochlan, M.P. Hughes, and V.L. Trainer. 2005. The synergy of iron, copper and the toxicity of diatoms. Limnol. Oceanogr. *50*: 1908-1917.

Wilkerson, F.P., R.C. Dugdale, V.E. Hogue and A. Marchi. 2006. Phytoplankton blooms and nitrogen productivity in San Francisco estuary. Estuaries and Coasts 29: 401-416.

Non-Peer Reviewed Publications By RTC Research Scientists: 2005-2006

Buturovic, L., S. Cohen, Z. He, M. Eggenberger, D. Nacci, and D. Petkovic. 2005. Supervised classification of genetic sequences for population analysis. The 7th International Meeting on Single Nucleotide Polymorphism and Complex Genome Analysis, Sept. 22-24, 2005, Leicestershire, UK.

Cochlan, W.P. and R.M. Kudela. 2006. The Southern Ocean iron enrichment experiment: the nitrogen uptake response. I*n:* Report of the 2004 Workshop on In Situ Iron Enrichment Experiments in the Eastern and Western Subarctic Pacific. PISCES Scientific Report *31*.

8. 9. 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 2005-2006

Revenue:

Total Grant & Contract Revenue, not including subcontracts	$4,598,923
Restricted Gifts: Annual Fund and other donations	$150,328

	Actuals
Bay Conference Center	$70,519
University Allocation	$1,190,472
Property Leases	$133,171
Other income (Grant charge backs)	$23,358
Research Vessels	$54,491
Total Revenues	**$1,472,011**

Expenses:

Salaries Paid by RTC Allocation *	$386,582
Benefits Paid by RTC Allocation *	$121,662
Administrative Fees Paid to SFSU	$54,953
Administrative Fees Paid to SFSUFI	$23,115
BCC & OGC Expenses	$33,119
Loan Payment Bldg 36 (Final)	$231,387
Marine Operations (Questuary, Insurance, etc)	$85,718
Telephones (Campus, Centrex, Cell)	$48,934
Utilities (sec, garbage, water, pest, elec, etc.)	$61,110
Vehicles (Gas/service/leases)	$29,796
Start-Up (Boyer, Cohen, Komada, Stillman)	$122,447
Office Supplies, Equipment, Services, Post, Print, PCs, etc.	$88,213
Facilities - Maint/Repair/tools, etc	$129,797
Lab/Safety/Health - Services, Equipment	$67,873
Construction (Design)	$2,831
Unbudgeted Directors Search	$17,125
Unbudgeted New Years Flood Damage	$77,965
Total Expenses	**$1,582,626**

Net Surplus (Deficit) **($110,615)**

* Does not include COSE paid Salaries and/benefits

10. 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
ROMBERG TIBURON BUILDINGS					
20	Ohrenschall Guest Center	3,600	All	Residence	Visitors/SFSU
36	Research Center	27,200	All	Research/Office/Classrooms/	SFSU/Lease - Weston Solutions Inc. (4976 sq ft or 18%)
39	Administration Office	7,080	All	Office/Classrooms/Lease	SFSU/Lease - Marin Biologic Lab (1920 sq ft or 27%)
49	Maintenance Shop/Marine Operations	16,925	All	Facilities/Art Department Student Studios	SFSU
50	Storage	16,925	All	Storage/Anthropology Archives	SFSU
53	Bay Conference Center/ Residence	7,700	All	Conferences/Caretaker Apt	SFSU/Rental
Occupied Former NOAA BUILDINGS				**Usage**	
30	Galley/ Admin Office	8453	All	Offices/Meeting Rooms/ Laboratories	SFSU/Lease - Taxon (1,278 sq ft or 15%) & SERC (460 sq ft or 5%)
54	Physiology Laboratory	7600	All	Research Labs	SFSU/Lease - Lobster Farms International Inc. (396 sq ft or 5%)
74	Vehicle Warehouse	2000	All	Boat/Vehicle Storage/Office	SFSU
74A	Offices	648	All	Offices	SFSU
Unoccupied Former NOAA BUILDINGS				**Proposed Usage**	
11	Caretaker Residence	2705	All	Residence	SFSU
21	Machine Shop	3780	All	Marine Operations	SFSU
22	Blacksmith Shop/ Carpentry Shop	3644	All	Marine Operations/Museum	SFSU
33	Rockfish Research Laboratory	4018	All	Student Dormitory	SFSU
37	Dispensary	2000	All	Student Dormitory	SFSU
86	Central Warehouse	11,000	All	Warehouse/Storage	NOAA

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

A. CURRENT AWARDS

Research Scientist	Funding Source/ Award Duration (yrs)	Proposal Title	Amount
Alissa Arp	NSF 9/15/02-8/1/07	My Place by the Bay (subcontract with the Bay Area Discovery Museum)	$0.00
	SF Bay and Conservation and Development Commission 5/5/04-6/30/06	SF Bay NERR HQ Water Development	$87,539
w/ Cochlan	U.S. Department of Education 10/1/04-9/30-06	Special MSEIP: Project Transquest: A Field Experience for Minority Students	$32,699
	Wetlands Research Associates 7/1/03-7/30/05	Yosemite Canal Wetlands Restoration	$0.00
Stephen Bollens	NSF 3/1/03-2/28/07	U.S. GLOBEC: Integration and Synthesis of the Georges Bank Broad-Scale Data Sets	$0.00
	CALFED 6/1/03-7/31/05	Sea Grant/CALFED	$3,320
	UCSD/Sea Grant 8/1/04-7/31/05	Sea Grant/CALFED	$0.00
	NSF 11/1/03-10/31/05	Role of Wind Driven Transport Phytoplankton	$0.00
	San Jose State University Foundation 8/1/03-7/31/05	CI-CORE	$104,738
	Office of Naval Research 1/1/00-9/30/05	Behavioral Responses of Zooplankton	$1,204
	CALFED 1/1/03-12/31/06	IRWN Program	$188,7111
w/ 4 co-PIs	CALFED 1/1/03-12/31/06	Integrated Regional Wetlands Monitoring: II: Fishes, Invertebrates, Primary Production and Nutrients	$21,750
Katharyn Boyer	NOAA 3/1/06-5/31/07	Restoring the Seagrass, *Zostera marina* L. in San Francisco Bay: Experimental Evaluation of a Seeding Technique	-$203
w/2 co-PIs	NOAA/CICEET 9/1/05-8/31/07	Evaluating Buoy-Deployed Seeding for Restoration of Eelgrass (*Zostera marina*) in San Francisco Bay	$11,560
w/2 co-PIs	CA Coastal Conservancy 4/1/06 – 4/1/08	Monitoring and Sxperimentation to Support Eelgrass Restoration in San Francisco Bay	$2,954
	CA Coastal Conservency 4/1/06-4/1/08	Monitoring and Experimentation to Support Eelgrass Restoration in San Francisco Bay	$2,955
	U.S. EPA 4/1/04-1/31/07	EPA STAR Fellowship FY05/06	$14,924
	NOAA/University of New Hampshire 9/1/05-8/31/07	NOAA CICEET	$9,594
	NOAA 5/1/05-2/28/06	Restoration Center	$20,544

Edward Carpenter	NSF 3/2/02-2/28/06	Collaborative Research – Biology and Phylogeny of Cyanobacterial Symbiosis	$1,077
	NSF 1/26/03-12/31/06	Bio-complexity Collaborative Research	$2,476
	NSF 1/1/04-12/31/06	Bio-complexity Collaborative Research	$24,557
	CALFED 1/1/03-12/31/06	IRWN Program	$19,317
Sarah Cohen	Harvard University 9/1/03-8/31/05	Population Signatures of Immunogenetic Adaptaion to Environmental Stress	$35,387
w/ 4 Co-PIs	NSF 1/14/04-10/31/07	Genetic Data Collection Capability for the Romberg Tiburon Center	-$71,445
	NSF 11/4/04-10/31/07	C/S Genetics Data Collection	$91,500
	CA State Coastal Conservancy 4/1/06-4/1/08	Eelgrass Planning	$0.00
	NOAA/University of New Hampshire 9/1/05 – 8/31/07	NOAA CICEET	$0.00
William Cochlan	NOAA/NSF 10/1/03-11/30/07	ECOHAB PNW: The Ecology and Oceanography of Toxic *Pseudo-nitzschia* in the Northeast Pacific	$17,433
	U.S. Dept. of Energy 8/15/04-8/14/07	The Effects of Fe(III)-Complexing Ligands on the Long-Term Ecosystem Response to Iron Enrichment of HNLC Waters	$21,835
	NSF- Chemical Ocean 7/1/03-6/30/07	Collaborative Research: The Effect of Iron-Complexing Ligands	$15,844
	NSF 6/15/01-11/30/05	Inorganic & Organic Nitrogen Utilization in SOFeX	$649
	NOAA 1/1/05-1/1/06	Quality Control Electronic Entry of Shellfish	$0.00
Richard Dugdale w/ Wilkerson	NSF-MRI 8/1/037/31/05	Acquisition of Isotope Tracer Instrumentation for the Romberg Tiburon Center	$0.00
	NSF-CoOP 11/1/03-10/31/06	CoOP The Role of Wind-driven Transport in Shelf Productivity	$19,442
	NSF-BE 12/1/03-11/30/07	Bio-Complexity: Plankton Dynamics and Carbon Cycling in the Equatorial Pacific	$19,544
	USC Sea Grant 3/1/05-2/28/07	Impact Of Anthropogenic Ammonium on Primary Production	$13,961
	CALFED 1/1/03-12/31/06	IRWN Program	$6,336
	Cost Sharing Comp Account 8/1/02-7/31/05	Romberg Tiburon Center	$34.00
	Farallone Nutrients 12/1/99-12/31/05	Naval Postgraduate School	$1,936
	Seawater Desalination Pilot Plant Program 3/1/05-2/28/06	Kennedy/Jenks Consultants, Inc.	$0.00

Richard Dugdale w/Wilkerson continued	Collaborative Research Biogeochemical Modeling 4/1/02-3/31/06	NSF	$3,408
	Acquisition of Isotope Tracer 8/1/02-7/31/05	NSF	40.00
Trish Foschi w/3 PI's	CALFED Ecosystem Restoration Program 11/1/03-10/31/06	Effects of climate variability and change on the vegetation and hydrology of the Bay-Delta watershed	$1,329
	California Integrated Waste Management Board 6/1/06-5/31/08	Satellite remote sensing of archaeological sites in Romania	$0.00
Newell Garfield	CDFG 6/1/04-3/31/07	Integration of Satellite Imagery with Surface Current Mapping Radar in Near Real Time- Ocean Imaging	$72,455
	CDF&F 6/1/04-5/31/06	Integration of Satellite Imagery	$0.00
	NSF 1/1/04-12/31/05	The Role of Wind Driven Transport Hydrography	$296
w/ Arp, Paduan	CA Coastal Conservancy 11/15/04-3/15/09	Coastal Ocean Circulation Monitoring Program for Central and Northern California	$1,293,879
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	$197
w/ Bennett	CALFED 2/2/04-6/30/07	Determining the Mechanisms Relating Freshwater Flow and Abundance of Estuarine Biota.	$57,785
w/ Gross	CALFED 2/2/04-6/30/07	Determining the Mechanisms Relating Freshwater Flow and Abundance of Estuarine Biota.	$18,893
	CALFED 2/2/05-2/1/06	Determining the Mechanisms Relating Freshwater Flow and Abundance of Estuarine Biota.	$0.00
	CALFED 2/2/05-2/1/06	Determining the Mechanisms Relating Freshwater Flow and Abundance of Estuarine Biota.	$0.00
w/Choi	NSF 4/1/04-2/28/07	Does Mating Success Determine Population Growth Rate at Low Abundance in Marine Copepods?	$11,918
	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	$3,524
	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	$25,061

Kimmerer continued	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	$12,940
	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	$29,077
	CALFED 4/1/06-3/31/09	Modeling the Delta Smelt Population of the San Francisco Estuary	$0.00
Jaime Kooser	NOAA 11/1/01-10/31/05	SF Bay NERR: Operations, Education and Monitoring	$0.00
	NOAA 11/1/04-4/30/06	SF Bay NERR: Operations, Education and Monitoring	$98,788
	NOAA 12/1/01-11/30/06	SF Bay NERR: Construction	$1,917,488
	NOAA 10/1/00-12/30/05	SF Bay NERR	$17,415
	NOAA 11/1/05-4/30/07	Reserve Manager Cochlan	$0.00
	NOAA 11/1/05-4/30/07	Reserve Manager	$1,070
	California Coastal Conservancy 11/30/04-6/30/06	Federal CELCP GIS	$885
Tom Parker	CALFED 1/3/03-12/31/06	IRWIN	$119,270
Dale Robinson	DOE 9/1/04-8/31/07	Photosynthetic Characteristics, Carbon Metabolism, & Nutrient Requirements of *Phaeocystis antarctica* & Diatom Species from Ross Sea, Antarctica.	$5,201
	SJSU Foundation 8/1/06-7/31/06	CI-CORE	$104,738
	NOAA 6/1/05-5/31/08	Oceanographic Product Development	$0.00
Jonathon Stillman	NSF 5/1/05-5/31/07	Correlating Cardiac Thermal Performance Limits with Transcriptome Profiles During Thermal Acclimation of the Intertidal Porcelain Crab, *Petrolisthes cinctipes*	$79,338
Drew Talley	NOAA Sea Grant 6/1/05-5/31/06	The Genetic Structure of an Invasion	$1,756
Grant Expenditures FY 2005/2006**			**$4,598,923**

**includes subcontracts to other institutions

B. MASTER THESES BY RTC GRADUATE STUDENTS

** Indicates the 13 theses completed in AY 2005-2006

Barada, Laila – 2006 - Nitrogen assimilation in diatoms, expression of glnII during eutrophication and simulated upwelling. Frances Wilkerson, Advisor. **

Shaun Baesman - In Progress – The Use of Tellurium Oxyanions by Anaerobic Bacteria with the Formation of Elemental Te Nanoparticals. Edward Carpenter, 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 pallasi*). 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 is Estuarine Populations of *Gracilaria verrucose*. Michael Josselyn, Advisor.

Dorman, Jeff – 2002 – Euphausiids of the Northern California Upwelling System. Stephen Bollens, Advisor

Duffield, Joan – 1986 – Waterbird Use of an Urban Stromwater 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.

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.

Huybrechs, Catherine – 2006 - Detecting *Egeria densa* using a knowledge engine and spatio-contexual 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.

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.

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 *Entromorpha 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 – H_2S 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.

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. **

Zaremba, Katie. 2002. Comparison of Native and Non-native Cordgrass and Hybrids in San Francisco Bay. Michael Josselyn, Advisor

Thesis work in Progress:

Auro, Maureen – In Progress – Nitrogenous Nutrition and Toxicity of *Pseudo-nitzschia cuspidata:* A Laboratory and Field Based Experiment William Cochlan, Advisor.

Avent, Sean – In Progress - Some Aspects of the Ecology of Two Invasive Estuarine Copepods, *Pseudodiaptomus inopinus* in the Chehalis River Estuary, WA, and *Pseudodiaptomus marinus* in the San Francisco Estuary, CA. Stephen Bollens, Advisor.

Briggs, Allegra – In Progress - Mitochondrial COI Analysis of an Invasive Copepod. Wim Kimmerer, Advisor.

Durand, John – In progress – Population Dynamics of Calanoid Copepods in the Upper San Francisco Estuary. Wim Kimmerer, Advisor

Grimaldo, Lenny – In Progress – Identifying the Carbon Sources and Trophic Structure of Fishes in Tidal Wetlands of the Sacramento-San-Joaquin Delta. Wim Kimmerer, Advisor.

Huntington, Brittany – In Progress - Is a macroalga bloom threatening seagrass survival? Responses of seagrass to increased macroagal dominance in a northern California bay. Katharyn Boyer, Advisor.

Lew, Kevin –In Progress –Methods Development to Apply the CytoSense Flow Cytometer to Evaluating Natural Phytoplankton Community Structure, Richard Dugdale, Advisor.

Lidstrom, Ulrika In Progress – Phytoplankton Identification, Primary Productivity and Ecology. Edward Carpenter, Advisor.

Nguyen, Rosalee – In Progress - Effects of Different Substrates on Foraging Behavior and Growth Rate of larval green sturgeon, *Acipenser medirostris.* Carlos Crocker, Advisor.

Perron-Burdick, Anya – In Progress - Integrated Management Techniques for the Eradication and Control of *Lepidium latifolium* (Perennial Peppergrass) in the San Francisco Estuary. Katharyn Boyer, Advisor.

Quinlan, Becky – In Progress - Individual Response to Flooding in the Trinity River Basin, Texas. Patricia Foschi, Advisor.

Regina Radan – In Progress – Nutrient Uptake and Toxicity of *Pseudo-nitzschia cuspidate*: A Laboratory and Field

Based Experiment. William Cochlan, Advisor.

Silva, Javir – In Progress – Blood Catecholamine Concentrations in Green Sturgeon (*Acipenser medirostris*) During Air Exposure. Carlos Crocker, Advisor.

Talianchich, Renny – In Progress - Modeling Effects of Freshwater Flow on Estuarine Circulation and Juvenile Fish Movement. Wim Kimmerer, Advisor.

Tirindelli, Joelle—In progress—Immunogenetic Variation in Estuarine Fish from Habitats with Varying Chemical Contaminant Loads. Sarah Cohen, Advisor.

Jennifer Yorty – In Progress – Nitrogen Fixation at Six San Francisco Bay Tidal Wetlands. Edward Carpenter, Advisor.

C. RTC COURSES AND ENROLLMENTS 2001-2006

COURSE	TITLE	INSTRUCTOR	UNITS	ENROLLMENT
Fall '01				
Biol 305	Marine Animals & Plants of the CA	Obrebski	3	13
Biol 582	Biological Oceanography	Bollens	3	19
Biol 584	Marine Microbial Ecology	Carpenter	4	7
Biol 862	Advances in Ecology Veg Patters	Foschi	2	4
Biol 863	Ecosystems Ecology	Wilkerson	2	15
Geo 102/3	Introduction to Oceanography	Garfield	3/1	20
Spring '02				
Biol 862	Systems Ecology	Carpenter	2	7
Summer '02				
Biol 315	Restoration Ecology	Martin	2	11
Biol 255	Introduction to Oceanography	Dorman	1	4
Biol 315	Introduction to SF Bay Ecology	Obrebski	1	8
Total AY 01-02 RTC Enrollment				**108**
Fall '02				
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
Spring '03				
Biol 502	Biology of the Algae	Wilkerson	3	5
Biol 862	Experimental Design	Obrebski	2	8
Geol 452	Coastal Processes	Garfield	3	5
Summer '03				
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**
Fall '03				
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
Spring '04				
Biol 395	Wetland Ecology	Boyer	3	6
Biol 863	Molecular Approaches	Cohen	2	6
Total AY 03-04 RTC Enrollment				**52**
RTC Fall '04				
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	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				**101**
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
Total AY 05-06 RTC Enrollment				**76**

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
AY 05-06 Fall Only RTC Enrollment				**78**

D. COURSES AND ENROLLMENTS TAUGHT BY RTC FACULTY AND STAFF ON CAMPUS 2001 – 2006

COURSE	TITLE	INSTRUCTOR	UNITS	ENROLLMENT
Fall '01				
Biol 580	Limnology Lecture and Lab	Martinez	3	17
Spring '02				
Biol 101	Human Biology Lab	Martinez	1	18
Biol 300	Nature Study	Carpenter/ Wilkerson	3	20
Biol 313	Principles of Ecology	Martinez	3	38
Biol 840	Community Ecology	Parker/Martinez	3	12
Biol 863	Plankton Biology	Bollens	2	7
Geog 611	Remote Sensing Envir II	Foschi	4	11
Geol 103	Intro to Oceanography	Garfield	3	20
Total AY 01-02 Enrollment				**143**
Fall'02				
Biol 863	Marine Symbiosis	Wilkerson	2	6
Geol 102	Intro to Oceanography	Garfield	3	32
Geog 203	Geographical Measurement	Foschi	3	26
Spring '03				
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				**127**

Fall '03				
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
Bio 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
Biol 863	Ecophysiology of HABs	Cochlan	2	5
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				**713**

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
AY 06-07 Fall Only Enrollment				**218**