
The MMS-UC Cooperative Research Programs

Briefing Document

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Mission of the Coastal Research Center

The Coastal Research Center of the Marine Science Institute, UC Santa Barbara, facilitates research and research training that foster a greater understanding of the causes and consequences of dynamics within and among coastal marine ecosystems. An explicit focus involves the application of innovative but basic research to help resolve coastal environmental issues.

Disclaimer

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PROGRAM OVERVIEW

EXECUTIVE SUMMARY

Background

The Minerals Management Service, State of California and University of California are involved in two cooperative research programs to explore issues related to OCS oil and gas extraction activities in the Pacific OCS Region. One is a University Research Initiative program, entitled the Southern California Educational Initiative (SCEI), which originally was awarded in 1989 and renewed for a second term in 1994. This program is slated to end this year. The second is a Coastal Marine Institute (CMI) program that was awarded in 1994 (the first UC-CMI research projects were initiated in 1995). We anticipate that the MMS-UC CMI will be renewed this year with a substantially enlarged budget.

The UC-CMI and SCEI programs have identical goals: (1) to produce and publish scientifically rigorous information on issues of regional and national importance regarding environmental, sociological and economic consequences of OCS post-lease activities, and (2) to enhance the pool of academic researchers capable of addressing current and future information needs of MMS and equivalent State agencies. While both programs seek to develop partnerships between MMS and State agencies in obtaining relevant information, this aspect is particularly emphasized in the UC-CMI program. The major difference between the two UC-MMS cooperative research programs is the requirement of a dollar for dollar match of MMS and non-federal funds for projects conducted under the aegis of the UC-CMI.

The current UC-CMI and SCEI each receive ~\$500,000 of MMS funds annually. MMS funds provided to the UC-CMI are matched each year with at least \$500,000 of non-federal funds. Any of the 9,000 regular and research faculty in the UC system are eligible to compete for these funds, and mechanisms exist to fund collaborative researchers at other academic institutions.

Three broad issue areas were emphasized in the most recent UC-MMS cooperative research programs. These were (1) the environmental, social and economic consequences of offshore production activities, (2) the valuation of coastal resources at risk to estimate potential social and economic consequences of impacts from OCS-related events, and (3) environmental and policy issues related to decommissioning of offshore production facilities and associated pipelines and onshore facilities.

The UC-CMI / SCEI programs currently have 5 elements. These are (1) the research projects that address issues of regional and/or national importance to MMS and equivalent State agencies, (2) long-term monitoring of ecological communities at risk to oil spills, (3) workshops and symposia conducted on behalf of MMS and State agencies, (4) a Student Internship Program where undergraduate and graduate students work with MMS personnel at the Pacific OCS office, and (5) program administration.

Peer Review

Since a primary goal is to produce scientific information of the highest caliber, peer review by academic researchers is centrally important in both UC-MMS programs. Two mechanisms of peer-review are used in our program. The first is conducted by us in the selection process of research projects. Each proposal is evaluated by 3-9 (average 4) external reviewers who are recognized academic experts in their respective fields. Any proposal that does not meet a stringent standard of review is not considered further. The second peer-review mechanism is that done when manuscripts arising from funded projects are submitted for publication in peer-reviewed journals. As detailed below, results of UC-CMI and SCEI projects have been published in top peer-reviewed journals at a tremendously high rate. The great

success of our Principal Investigators in passing peer review is a clear indication of both the quality and quantity of research being done under the UC-CMI and SCEI.

Summary Statistics

MMS Funding Levels and Allocation

Since 1994, MMS has provided \$2.69 million to the UC-CMI and \$3.14 million to the SCEI. The percent of these funds allocated to each program element to date is presented in the following table.

Program Element	Allocation of MMS Funds	
	UC-CMI	SCEI
Research Projects	72%	67%
Monitoring Studies	9%	8%
Workshops/Symposia	2%	6%
Student Internships	7%	0%
Administration	10%	19%

Amount and Sources of Match for CMI Funds

Since 1994, the amount of non-Federal funds obtained as match for UC-CMI projects that have been awarded is \$2.82 million. Sources and fraction of this match figure are the University of California (65%), the California State University system (2%), California State agencies (15.5%), local California governments (3%) and the private sector (14.5%).

Research Proposals Submitted and Funded

Since 1994, UC-CMI and SCEI collectively received 80 letters of intent (pre-proposals) from researchers on 6 of the 8 general campuses of the University of California. Of these, full proposals were requested for 59, of which 41 were funded. The overall funding rate, therefore, was 51% of the pre-proposals and 70% of the full proposals. Of the 41 projects awarded, 16 were funded by the CMI and 25 were funded by the SCEI. About 20% of the projects (by number or dollars awarded) were in the social sciences, with the remainder in the natural sciences. A complete list of funded projects can be found in this document.

Publications and Publication Rate

The total number of peer-reviewed articles that have resulted from (and acknowledge support of) the UC-CMI and SCEI programs to date is 139. In addition, there have been over 50 abstracts, non-peer-reviewed publications, and student dissertations that have arisen from MMS support of these programs. Citations for these publications are contained in this document.

Since 1994, the collective amount of MMS funding that has been allocated to research projects in the UC-CMI and SCEI programs is approximately \$4.56 million. Thus our programs conservatively have produced 2.9 peer-reviewed papers per \$100,000 of MMS funding (several projects are ongoing that will add to the total publication count). To place this rate in context, we compared our publication efficiency with that of the Division of Biological Oceanography of the National Science Foundation and that of the Ocean Biology Program of the Office of Naval Research. *Please note that we exclude NSF and ONR funds for ship-time from these calculations.* The number of publications per \$100,000 is 1.6 for NSF Biological Oceanography and 1.7 for ONR Ocean Biology programs. Clearly the UC-CMI and SCEI programs have been

highly cost-effective both in terms of peer-reviewed publications per dollar and in absolute number of publications.

Human Resources

Since 1994, 50 UC faculty have received funding from either the UC-CMI or the SCEI. None had had experience conducting research on oil and gas production issues prior to the initiation of the SCEI / UC-CMI programs. In addition, 6 faculty from several non-UC academic institutions (University of Florida, Ohio State University, California State University Fullerton, California State University Long Beach, California State University Monterey, University of Rhode Island) have received funding. Curriculum Vitae of faculty participants in the UC-CMI and SCEI programs are contained in this document.

A major goal is to involve students in the research projects. To date, more than 350 Student Trainees have been involved in the UC-CMI and SCEI programs (see Table below). Of these 32% have been graduate students, 56% undergraduates, and 12% post-doctoral students. A list of these Student Trainees is included in this document.

Number of Students Involved in the UC-CMI and SCEI Programs

<u>Level of Student</u>	<u>CMI (94-99)</u>	<u>SCEI (94-99)</u>	<u>SCEI (89-94)</u>
Post-doctoral	9	17	21
Graduate	33	38	54
Undergraduate	<u>128</u>	<u>46</u>	<u>45</u>
<i>Totals</i>	170	101	120

Of the graduate students that have finished their degrees and the post-doctoral students that have completed their research involvement with the UC-CMI or SCEI programs, 50% have accepted university faculty positions, 13% have taken positions with Federal resource agencies, 27% have accepted jobs with industry, and 10% have taken post-doctoral positions.

During the past 4 years the UC-CMI program has had a Student Internship Program between the Pacific OCS Office in Camarillo and UC Santa Barbara. A primary objective is to provide students with direct exposure to the kinds of issues MMS deals with, and the manner by which those issues need to be addressed. A total of 21 Undergraduate and 4 Graduate Student Interns has been selected to work with MMS staff at the Pacific OCS office.

The UC-CMI and SCEI programs have had a tremendous influence in attracting researchers at all stages of accomplishment to focus on issues relevant to the mission of MMS and equivalent State agencies. These programs are highly visible within the UC system, and they have produced a large and growing network of researchers capable of addressing present and future information needs of MMS.

Renewal of the MMS-UC Coastal Marine Institute

Targeted research areas remain to be developed for the renewed MMS-UC CMI. However, it is clear that considerable information remains to be generated regarding decommissioning of offshore and onshore production facilities in the Pacific OCS (including the regionally contentious issues related to the disposition of platforms (i.e., rigs-to-reef and shell mounds). We anticipate considerable input on research needs for these (and other) issues from several sources, including the Inter-Agency Working Group for Decommissioning and the recently formed Blue Ribbon Panel of UC scientists charged by the UC President.

It appears that the MMS-UC Coastal Marine Institute will be renewed for a second 5-year term with a funding level that is double the previous award. However, the SCEI (University Research Initiative) is not being renewed. This means that: (1) the level of MMS funding available to UC researchers will remain essentially flat; (2) the amount of non-federal matching funds will need to be doubled for the same amount of MMS funds; and (3) program flexibility will be reduced. Additional challenges include the need to augment the participation of State in the cooperative program (including increased fiscal contributions), to increase the participation of researchers in the social sciences, and to enhance the Internship component of the CMI. The following are issues and recommendations regarding the renewed MMS-UC CMI.

1. The \$1 to 1.25 million annual level of MMS funding that is likely to be made available to the UC CMI remains below that needed to meet the level of interest of UC faculty for conducting research on issues of central importance to MMS and equivalent State agencies. The Pacific OCS Region is a natural laboratory that can provide answers to issues of both national and regional importance that cannot be obtained elsewhere. The University of California offers a range and depth of expertise that is unparalleled in the country. We request that:
 - (a) MMS funding levels in the 4 out-years of the program be increased to \$1.5 million per year, and
 - (b) in a given fiscal year, existing CMIs be first in line to compete for funds authorized for but not obligated by other CMIs.
2. The requirement that Tasks are matched dollar-for-dollar places undue and unintended constraints on the research program. Match is more difficult to secure for certain types of projects (e.g., social and policy studies) than for others, and the composition of the research portfolio can be influenced as much by the availability of matching funds as by the quality of the science and priority of the topic. We request that:
 - (a) the 1:1 requirement for non-federal match be relaxed to 1 non-federal dollar for every 2 MMS dollars, and
 - (b) instead of a 'By Task' match requirement, the CMI be required to match MMS dollars 'By Program'. This would enable us to have studies with excess match cover short-falls by other projects.

RESEARCH PROJECTS FUNDED

**SOUTHERN CALIFORNIA EDUCATIONAL INITIATIVE
RESEARCH PROJECTS
1989-1999**

Project Title	Principal Investigator(s)	Project Period
Characterization and Fate of Produced Water Discharged in Shallow Coastal Waters	R. Flegal	5/89-5/94
Ecological Effects of Chronic Exposure to Produced Water: A Field Test	C. Osenberg, S. Holbrook, W. Murdoch, R. Schmitt	5/89-5/94
Effects of Produced Water on Demographic Rates: Integration of Individual Responses with Population Consequences	R. Schmitt, C. Osenberg	5/89-5/92
Resuspension, Flocculation, and Transport of Drilling Muds and Fine-grained Sediments	W. Lick	5/89-5/92
Environmental Degradation and Identification of Toxic Compounds of Petroleum and Associated Materials	R. Higashi, D. Crosby	5/89-5/92
Assessment of Chronic Toxicity of Petroleum and Produced Water Components to Marine Organisms	G. Cherr, T. Fan, R. Higashi	5/89-5/92
Risk Analysis	W. Lick	5/89-5/91
Mitigating the Impact of Offshore Oil: Development Implementation Issues	J. Woolley	5/89-5/94
Estimation of Economics Effects on Aquaculture Leases of Offshore Oil Development	M. Caswell	5/89-8/90
Potential Biogenic Habitat Alteration by OCS Activities: Adverse Effects to Early Life-History Stages of Giant Kelp from Chronic Disturbance	D. Reed, M. Neushul, A. Ebeling	5/91-5/93
Environmental Assessment: Statistical Description of Variable Effects on Fluctuating Populations	A. Stewart-Oaten	5/91-5/93
An Evaluation of Current Programs to Identify and Mitigate Socioeconomic Impacts in the Santa Barbara Channel Region: An Analysis of SEMP	J. Woolley, H. Molotch	5/91-9/92
Chronic Toxicological Effects of Produced Water on Reproduction and Development in Marine Organisms	G. Cherr, T. Fan	6/92-5/94
Identification, Fate and Transport of Bioactive Compounds from Produced Water Discharge	R. Higashi, D. Jones	6/92-5/94

**SOUTHERN CALIFORNIA EDUCATIONAL INITIATIVE
RESEARCH PROJECTS - continued**

Project Title	Principal Investigator(s)	Project Period
Spatial Scale of Produced Water Impacts as Indicated by Plume Dynamics and Biological Field Assays	S. MacIntyre, L. Washburn, C. Osenberg	6/92-5/94
The Effects of Produced Water on the Settlement of Some Marine Invertebrates	P. Raimondi	6/92-5/94
Trends in Public Opinion on Offshore Oil Development in California	E. Smith	6/92-12/93
Environmental Effects of Produced Water: A BACIP Field Assessment	M. Carr, S. Holbrook, P. Raimondi, C. Osenberg	7/94-6/95
Characterization of Organic Constituent Patterns at a Produced Water Discharge Site/Barium Relations to Bioeffects of Produced Water	R. Higashi, A. D. Jones, T. Fan	7/94-6/95
Characterization of Metal Constituent Patterns at a Produced Water Site	A. R. Flegal	7/94-6/95
Effects of Barium and Divalent Cations Associated with Oil Production Wastes on Developing Marine Organisms	G. N. Cherr, T. W. Fan	7/94-6/95
Development of an SCEI Social and Economic Research Agenda	M. Carr, R. J. Schmitt	7-94-6/95
Environmental Recovery Following Cessation of a Produced Water Discharge	R. J. Schmitt, C. W. Osenberg	7/94-6/96
Environmental Assessment: Statistical Description of Variable Effects on Fluctuating Populations	A. Stewart-Oaten	7/94-6/98
Trends in Public Opinion on Offshore Oil Development: Fine Scale Resolution / Public Perceptions of Risk in Energy Development	E. Smith	7/94-6/97
Structural Evolution of the Hosgri-Purisima-Lompoc Fault System, Santa Maria Basin, California, from 3-D Map Restoration: Economic and Earthquake Hazard Implications	M, Kamerling, C. Sorlien	7/95-6/97
Effects of Metal Toxicants on the Energy Budgets of Marine Organisms: A Modeling Approach	R. Nisbet	7/95-6/97
Effects of Biologically Degraded Oil on Marine Invertebrate and Vertebrate Embryos and Larvae	G. Cherr, F. Griffin	7/96-6/99

**SOUTHERN CALIFORNIA EDUCATIONAL INITIATIVE
RESEARCH PROJECTS - continued**

Project Title	Principal Investigator(s)	Project Period
Detecting Ecological Impacts: Effects of Taxonomic Aggregation in the Before-After/Control-Impact Paired Series Design	S. Holbrook, M. Carr, C. Osenberg	7/96-6/99
Public Policy, Oil Production, and Energy Consumption in Twentieth-Century California	R. Schurman	7/96-6/98
Evaluating the Impact of Oil Spills on Southern California Rocky Intertidal Populations and Communities: Development of a Handbook	R. Ambrose	7/96-6/97
Inventory of Rocky Intertidal Resources in San Diego County	J. Engle	11/96-2/98
Interagency Rocky Intertidal Monitoring Network Workshop	J. Engle, R. Ambrose P. Raimondi	12/96-7/97
A Workshop on the Decommissioning of Offshore Oil and Gas Facilities in California	M. Carr	3/97-12/97
Effects of an Oil Spill on Multispecies Interactions that Structure Intertidal Communities	P. Raimondi	7/97-6/00
Adding Biology to BACI: Exploring the Use of Functional Groups, Trophic Relationships and Multiple, Ecologically Similar Comparison Sites in Choosing Models and Estimating Effects Impact Analysis	A. Stewart-Oaten, S. Schroeter	1/98-9/99
Inventory of Rocky Intertidal Resources in Southern Santa Barbara and Orange Counties	R. Ambrose	1/98-12/00
Inventory of Rocky Intertidal Resources in San Luis Obispo and Northern Santa Barbara Counties	P. Raimondi	1/98-12/99
Application of Genetic Techniques for use in Restoration of Surfgrass (<i>Phyllospadix torreyi</i>)	S. Hodges, D. Bush D. Reed	3/99-3/00
Early Development of Fouling Communities on Offshore Oil Platforms	H. Page, J. Dugan	1/99-6/00
The Political Economy of the Rigs-to-Reef Option for Decommissioning of Offshore Oil and Gas	M. McGinnis, L. Fernandez C. Pomeroy	1/99-6/00
A Design for a Time Series Study of a NIMBY Response	E. Smith	1/99-6/00

**COASTAL MARINE INSTITUTE
RESEARCH PROJECTS
1995-1999**

Project Title	Principal Investigator(s)	Project Period
Ecological Consequences of Alternative Abandonment Strategies for POCS Offshore Facilities and Implications for Policy Development	M. Carr, G. Forrester, M. McGinnis	7/95-6/98
Joint UCSB-MMS Pacific OCS Student Internship and Trainee Program	J. Dugan, E. Keller	7/95-6/00
Valuation of Coastal Resources - Understanding Substitution in Time and Space	R. Deacon, C. Kolstad	7/95-8/97
Testing and Calibrating the Measurement of Nonmarket Values for Oil Spills Via the Contingent Valuation Method	W. M. Hanemann, J. Krosnick	7/95-6/96
Effect of Offshore Oil Platform Structures on the distribution Pattern of Commercially Important Benthic Crustaceans, with Emphasis on the Rock Crab	H. Page, J. Dugan	7/95-6/97
Development of Methods for Surfgrass (<i>Phyllospadix</i> spp.) Restoration Using Early Life History Stages	D. Reed, S. Holbrook, S. Worcester	7/95-6/98
Inventory of Rocky Intertidal Resources in San Luis Obispo, Santa Barbara and Orange Counties	J. Engle, R. Ambrose, P. Raimondi	10/95-9/97
A Methodology for Investigation of Natural Hydrocarbon Gas Seepage in the Northern Santa Barbara Channel	B. Luyendyk, L. Washburn, S. Banerjee, J. Clark	10/95-9/97
Aerial Surveys of Distribution and Abundance of Marine Birds and Mammals in Santa Barbara Channel and the Santa Maria Basin	M. Bonnell	10/96-9/98
Utilization of Sandy Beaches by Shorebirds: Relationships to Population Characteristics of Macrofauna Prey Species and Beach Morphodynamics	J. Dugan	7/96-6/97
Effects of Produced Water on Complex Behavior Traits of Invertebrate Larvae and Algal Zoospores	P. Raimondi	1/97-6/98
Application of Coastal Ocean Dynamics Radars for Observation of Near-Surface Currents off the South-Central California Coast	L. Washburn, S. Gaines	10/96-9/99

**COASTAL MARINE INSTITUTE
RESEARCH PROJECTS - continued**

Population Trends and Trophic Dynamics in Pacific OCS Ecosystems: What Can Monitoring Tell Us?	R. Schmitt, A. Brooks	7/97-6/02
Effects of Temporal and Spatial Separation of Samples on Estimation of Impacts	P. Raimondi	1/98-12/99
Wave Prediction in the Santa Barbara Channel	R. Guza, R O'Reilly	10/97-9/99
Assessing Toxics Effects on Population Dynamics Using Individual-Based Energy Budget Models	R. Nisbet, E. Muller	1/98-12/99
An Experimental Evaluation of Methods of Surfgrass (<i>Phyllospacix torreyi</i>) Restoration Using Early Life History Stages	D. Reed, S. Holbrook	7/99-12/00

RESEARCH PRODUCTIVITY

SCEI Published and In Press	17
CMI Published and In Press	26
Dissertations / Theses	30

RESEARCH PRODUCTIVITY RESULTING FROM SCEI FUNDING 1989-1999

Published and In Press

- Abu-Saba, K. E. and A. R. Flegal. 1995. Chromium speciation in San Francisco Bay: Superposition of geochemical processes causes complex spatial distribution of inorganic species. *Marine Chemistry* **49**:189-200.
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- Ziegler, C.K. 1990. *A numerical analysis of sediment transport in shallow water*. Ph.D. Dissertation. University of California, Santa Barbara.

TRAINEES AND PERSONNEL

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**POSTGRADUATE SCHOLARS INVOLVED IN THE
SOUTHERN CALIFORNIA EDUCATIONAL INITIATIVE and
COASTAL MARINE INSTITUTE**

Name	Campus	Project	Program
Amsler, C.	UC Santa Barbara	Kelp ¹	SCEI
Anderson, L.	UC Santa Cruz	Metals 1 ²	SCEI
Blanchette, C.	UC Santa Barbara	Surfgrass Restoration 1 ³ , Internship ⁴	CMI
Boxshall, A.	UC Santa Cruz	Larvae ⁵	CMI
Clifton, K.	UC Santa Cruz	Larvae	CMI
Edwards, M.	UC Santa Barbara	Kelp	SCEI
Forrester, G.	UC Santa Barbara	Carpinteria 1 ⁶ , Gaviota 1 ⁷	SCEI
Garman, G.	UCD/Bodega Marine Lab	Toxicant Activity 2 ⁸	SCEI
Gaylor, B.	UC Santa Barbara	CODAR ⁹	CMI
Gill, G.	UC Santa Cruz	Metals 1	SCEI
Gottschalk, C.	UC Santa Barbara	Plume ¹⁰	SCEI
Griffin, F.	Bodega Marine Lab	Toxicant Activity 2	SCEI
Huang, H.	UC Santa Barbara	Flocculation ¹¹	SCEI
Jarman, W.	UC Santa Cruz	Metals 1, 2 ¹²	SCEI
Jensen, R.	UC Santa Barbara	Management ¹³	SCEI
Kelley, R.	UC Santa Cruz	Metals 1, Toxicant Fate ¹⁴	SCEI
Lewis, R.	UC Santa Barbara	Kelp	SCEI
Lika, D.	UC Santa Barbara	Modeling 1 ¹⁵ , 2 ¹⁶	SCEI/CMI
Lin, S.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Lohse, D.	UC Santa Cruz	Larvae	CMI
Manker, D.	UC Davis	Toxicant ID 1 ¹⁷	SCEI
Marinovick, B.	UC Santa Cruz	Larvae	CMI
McNeil, J.	UC Santa Barbara	Flocculation	SCEI
Muller, E.	UC Santa Barbara	Modeling 1	SCEI
Perez, M.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Pillai, M.	Bodega Marine Laboratory	Toxicant Activity 1 ¹⁸ , 2	SCEI

¹ Kelp - PIs Reed, Neushul, Ebeling, 1991-93

² Metals 1 - PI Flegal, 1989-94

³ Surfgrass Restoration 1 - PIs Reed, Holbrook, Worcester, 1995-98

⁴ Internship - PIs Dugan, Keller, 1995-00

⁵ Larvae - PI Raimondi, 1997-98

⁶ Carpinteria 1 - PIs Schmitt, Osenberg, 1989-92

⁷ Gaviota 1 - PIs Osenberg, Holbrook, Murdoch, Schmitt, 1989-94

⁸ Toxicant Activity 2 - PIs Cherr, Fan, 1992-94

⁹ CODAR - PIs Washburn, Gaines, 1996-99

¹⁰ Plume - PIs MacIntyre, Washburn, Osenberg, 1992-94

¹¹ Flocculation - PI Lick, 1989-92

¹² Metals 2 - PI Flegal, 1994-95

¹³ Management - PI Schmitt, 1989-1999

¹⁴ Toxicant Fate - PIs Higashi, Jones, 1992-94

¹⁵ Modeling 1 - PI Nisbet, 1995-97

¹⁶ Modeling 2 - PIs Nisbet, Muller, 1998-99

¹⁷ Toxicant ID 1 - PIs Higashi, Crosby, 1989-92

¹⁸ Toxicant Activity 1 - PIs Cherr, Higashi, Shenker, Fan, 1989-1993

POSTGRADUATE SCHOLARS - continued

Name	Campus	Project	Program
Prest, H.	UC Santa Cruz	Metals 1	SCEI
Raimondi, P.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Sberze, A.	UC Berkeley	Carpinteria 2 ¹⁹ , Gaviota 2 ²⁰	SCEI
Smith, D.	UC Santa Cruz	Metals 1, 2	SCEI
Steele, M.	UC Los Angeles	Platform Abandonment ²¹	CMI
Tong, Y.	UC Davis	Toxicant ID 2 ²²	SCEI
Tsuchiya, E.	UC Santa Barbara	Abalone Larvae ²³	SCEI
Véron, A.	UC Santa Cruz	Metals 1, 2	SCEI
Vines, C.	UC Davis	Biologically Degraded Oil ²⁴	SCEI
Wasson, K.	UC Santa Cruz	Larvae	CMI
Wilson, W.	UC Santa Barbara	Modeling 1	SCEI
Wood, S.	UC Santa Barbara	Modeling 1	SCEI

¹⁹ Carpinteria 2 - PIs Schmitt, Osenberg, 1994-96

²⁰ Gaviota 2 - PIs Carr, Holbrook, Raimondi, Osenberg, 1994-95

²¹ Platform Abandonment - PIs Carr, Forrester, McGinnis, 1995-98

²² Toxicant ID 2 - PIs Higashi, Jones, Fan, 1994-95

²³ Abalone Larvae - PI Raimondi, 1992-94

²⁴ Biologically Degraded Oil – PIs Cherr, Griffin, 1996-99

**GRADUATE STUDENTS INVOLVED IN THE
SOUTHERN CALIFORNIA EDUCATIONAL INITIATIVE and
COASTAL MARINE INSTITUTE**

Name	Campus	Project	Program
AbuSaba, K.	UC Santa Cruz	Metals 1, 2	SCEI
Altstatt, J.	UC Santa Barbara	Shoreline Inventory 1 ²⁵ , 3 ²⁶ Abalone Larvae	SCEI/CMI
Ammann, A.	UC Santa Cruz	Platform Abandonment	CMI
Anderson, L.	UC Santa Cruz	Metals 1	SCEI
Anghera, M.	UC Los Angeles	Shoreline Inventory 3	SCEI
Armbrust, K.	UC Davis	Toxicant ID 1	SCEI
Bacon, C.	UC Santa Cruz	Metals 1	SCEI
Bashey, F.	UC Berkeley	Carpinteria 2	SCEI
Beamish, T.	UC Santa Barbara	SEMP ²⁷ , Internship	SCEI/CMI
Beck, N.	UC Santa Cruz	Metals 2	SCEI
Beckenbach, E.	UC Santa Barbara	CODAR	CMI
Beers, I.	UC Santa Cruz	Platform Abandonment	CMI
Blethrow, H.	Bodega Marine Lab/UCD	Barium ²⁸ , Toxicant Activity 2	SCEI
Briggs, C.	UC Santa Barbara	Gaviota 1	SCEI
Brooks, A.	UC Santa Barbara	Modeling, Internship, Population Trends ²⁹	SCEI/CMI
Bull, S.	UC Santa Barbara	Surfgrass Restoration 2 ³⁰	CMI
Cabugos, T.	UC Santa Barbara	Mitigation Issues ³¹	SCEI
Carr, M.	UC Santa Barbara	Gaviota 1, Carpinteria 1	SCEI
Carro-Donna, M.	UC Santa Barbara	Flocculation, Risk Analysis ³²	SCEI
Chan, D.	UC Santa Barbara	Platform Abandonment	CMI
Chen, J.	UC Santa Barbara	Flocculation, Risk Analysis	SCEI
Coury, D.	UC Santa Barbara	Kelp	SCEI
Craig, C.	UC Santa Barbara	Statistics 1 ³³ , 2 ³⁴	SCEI
Creasy, C.	UC Santa Cruz	Metals 1, 2	SCEI
Culver, C.	UC Santa Barbara	Rock Crabs ³⁵	CMI
Dugan, D.	UC Santa Barbara	Rock Crabs	CMI
Dvorsky, J.	UC Santa Barbara	Internship	CMI
Eckert, G.	UC Santa Barbara	Internship	CMI
Edwards, M.	UC Santa Barbara	Kelp	SCEI
Espada, L.	UC Santa Barbara	Management, Taxonomy ³⁶ , Platform Abandonment	SCEI/CMI

²⁵ Shoreline Inventory 1 - PIs Engle, Ambrose, Raimondi, 1995-97

²⁶ Shoreline Inventory 3 – PI Ambrose, 1998-2000

²⁷ SEMP - PIs Woolley, Molotch, 1991-92

²⁸ Barium - PIs Cherr, Fan, 1994-95

²⁹ Population Trends – PIs Schmitt, Brooks, 1997-2002

³⁰ Surfgrass Restoration 2 – PIs Reed, Holbrook, 1998-2000

³¹ Mitigation Issues - PI Woolley, 1989-94

³² Risk Analysis - PI Lick, 1989-91

³³ Statistics 1 – PIs Stewart-Oaten, 1994-98

³⁴ Statistics 2 – PIs Stewart-Oaten, Schroeter, 1998-99

³⁵ Rock Crabs - PIs Page, Dugan, 1995-97

³⁶ Taxonomy - PIs Holbrook, Carr, Osenberg, 1996-99

GRADUATE STUDENTS - continued

Name	Campus	Project	Program
Forde, S.	UC Santa Cruz	Shoreline Inventory 1, 4, Intertidal Effects ³⁷	CMI/SCEI
Ganguli, P.	UC Santa Cruz	Metals 2	SCEI
Garcia, S.	UC Santa Barbara	Trends 1 ³⁸	SCEI
Garman, G.	Bodega Marine Laboratory	Toxicant ID 1, 2, Toxicant Activity 2	SCEI
Giambalvo, E.	UC Santa Cruz	Metals 1, 2	SCEI
Greffer, J.	UC Berkeley	Contingent Valuation ³⁹	CMI
Haberman, K.	UC Santa Barbara	Rock Crabs	CMI
Hamdoun, A.	UC Davis	Biologically Degraded Oil	SCEI
Hanks, S.	UC Santa Barbara	Platform Abandonment	CMI
Herms, W.	UC Santa Barbara	NIMBY ⁴⁰	SCEI
Herren, C.	UC Santa Barbara	Platform Abandonment	CMI
Herrlinger, T.	UC Santa Barbara	Carpinteria 1	SCEI
Hibbard-Robbins, T.	Bodega Marine Laboratory	Toxicant Activity 2	SCEI
Hosseini, P.	UC Santa Barbara	Modeling	SCEI
Huang, H.	UC Santa Barbara	Flocculation, Risk Analysis	SCEI
Hull, H.	UC Santa Barbara	SEMP	SCEI
Inouye, L.	UC Davis	Toxicant ID 1	SCEI
Jacobsen, B.	UC Santa Barbara	Hydrocarbon Seep ⁴¹	CMI
Jarman, W.	UC Santa Cruz	Metals 1	SCEI
Jorgenson, G.	UC Davis	Toxicant ID 1	SCEI
Kono, C.	UC Santa Barbara	Mitigation Issues, SEMF	SCEI
Kratz, K.	UC Santa Barbara	Internship	CMI
Krause, P.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Lewis, R.	UC Santa Barbara	Kelp	SCEI
Lima, J.	UC Santa Barbara	Mitigation Issues, SEMF	SCEI
MacDonald, J.	UC Davis	Toxicant ID 1	SCEI
Marquez, M.	UC Santa Barbara	Trends 1, 2 ⁴²	SCEI
Martinez, A.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
McGinnis, M.	UC Santa Barbara	Mitigation Issues, SEMF	SCEI
Meade, D.	UC Santa Barbara	Management	SCEI
Mohn, C.	Ohio State University	Contingent Valuation	CMI
Nevarez, L.	UC Santa Barbara	SEMF, Internship	SCEI/CMI
Newnham, M.	UC Santa Barbara	Rock Crabs	CMI
Noonburg, E.	UC Santa Barbara	Modeling	SCEI
Owen, B.	UC Santa Cruz	Metals 2	SCEI
Paulia-Jory, T.	UC Santa Barbara	Mitigation Issues, SEMF	SCEI
Paulsen, K.	UC Santa Barbara	SEMF	SCEI
Pickens, K.	UC Santa Barbara	Risk Analysis, Flocculation	SCEI
Poteet, M.	UC Berkeley	Carpinteria 2	SCEI
Quigley, D.	UC Santa Barbara	Hydrocarbon Seeps	CMI
Readdie, M.	UC Santa Cruz	Larvae	CMI

³⁷ Intertidal Effects – Raimondi, 1997-2000

³⁸ Trends 1 - PI Smith, 1992-93

³⁹ Contingent Valuation - PIs Hanemann, Krosnick, 1995-99

⁴⁰ NIMBY – PI Smith, 1999-00

⁴¹ Hydrocarbon Seep - PIs Luyendyk, Washburn, Banerjee, Clark, 1995-97

⁴² Trends 2 - PI Smith, 1994-96

GRADUATE STUDENTS - continued

Name	Campus	Project	Program
Richer, J.	UC Santa Barbara	Mariculture ⁴³	SCEI
Ritson, P.	UC Santa Cruz	Metals 1, 2	SCEI
Rivera-Duarte, I.	UC Santa Cruz	Metals 1, 2	SCEI
Rodgers, T.	UC Santa Barbara	SEMP	SCEI
Sabin, P.	UC Berkeley	Public Policy ⁴⁴	SCEI
Sañudo-Wilhelmy, S.	UC Santa Cruz	Metals 1, 2	SCEI
Schroeder, D.	UC Santa Barbara	Platform Abandonment	CMI
Seydel, K.	UC Santa Barbara	Carpinteria 2, Gaviota 2, Taxonomy, Internship	SCEI
Shields, T.	Bodega Marine Laboratory	Toxicant Activity 1	SCEI
Shuman, C.	UC Santa Barbara	Internship, Population Trends	CMI
Smith, D.	UC Santa Cruz	Metals 1	SCEI
Soiseth, C.	UC Santa Barbara	Carpinteria 1	SCEI
Solomon, E.	UC Santa Barbara	Surfgrass Restoration 1	CMI
Spangenberg, J.	UC Davis	Barium, Toxicant Activity 1, 2	SCEI
St. Mary, C.	UC Santa Barbara	Gaviota 2, Carpinteria 2	SCEI
Steely, D.	UC Santa Barbara	Rock Crabs	CMI
Steichen, D.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Stern, S.	UC Santa Barbara	Valuation/Substitution ⁴⁵	CMI
Stone, S.	UC Santa Barbara	Plume	SCEI
Swall, L.	UC Santa Cruz	Metals 1	SCEI
Swearer, S.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Taylor, C.	UC Santa Barbara	Shoreline Inventory 1	SCEI
Toole, A.	UC Davis/UC Berkeley	Toxicant ID 1	SCEI
Valeva, A.	UC Santa Barbara	Statistics 1, 2	SCEI
Van Dyke, N.	UC Santa Barbara	Internship, Trends 1, 2	SCEI/CMI
Vines, C.	UC Davis	Barium, Biologically Degraded Oil	SCEI
Visser, P.	Ohio State University	Contingent Valuation	CMI
Warner, K.	UC Santa Barbara	SEMP	SCEI
Wilder, A.	UC Santa Barbara	SEMP	SCEI
Wilson, J.	Univ. Florida, Gainesville	Taxonomy	SCEI
Wilson, M.	UC Santa Cruz	Shoreline Inventory 1, 4 ⁴⁶	SCEI
Witter, A.	UC Davis	Toxicant ID 2	SCEI
Worth, W.	UC Santa Barbara	Internship	CMI
Xu, Y.	UC Santa Barbara	Flocculation, Risk Analysis	SCEI
Ziegler, K.	UC Santa Barbara	Flocculation, Risk Analysis	SCEI

⁴³ Mariculture - PI Caswell, 1989-90

⁴⁴ Public Policy – PI Schurman, 1996-99

⁴⁵ Valuation/Substitution - PIs Deacon, Kolstad, 1995-96

⁴⁶ Shoreline Inventory 4 – PI Raimondi, 1998-2000

**UNDERGRADUATES INVOLVED IN THE
SOUTHERN CALIFORNIA EDUCATIONAL INITIATIVE and
COASTAL MARINE INSTITUTE**

Name	Campus	Project	Program
Adreani, M.	UC Santa Barbara	Platform Abandonment	CMI
Altieri, A.	UC Santa Cruz	Larvae	CMI
Anderson, S.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Aragon, L.	UC Davis	Biologically Degraded Oil	SCEI
Bacon, C.	UC Santa Cruz	Metals 1	SCEI
Baer, C.	UC Santa Barbara	Surfgrass Restoration 2	CMI
Bailey, D.	UC Santa Cruz	Shoreline Inventory 4, Intertidal Effects	SCEI/CMI
Bailey, J.	UC Berkeley	Carpinteria 2	SCEI
Banks, B.	UC Santa Barbara	Rock Crabs	CMI
Barrie, J.	UC Santa Barbara	Internship	CMI
Bartsch, E.	UC Santa Barbara	Faults ⁴⁷	SCEI
Basuino, E.	UC Santa Barbara	Internship	CMI
Bean, T.	UC Santa Cruz	Larvae	CMI
Below, A.	UC Santa Barbara	Internship	CMI
Berman, D.	UC Santa Cruz	Taxonomy	SCEI
Best, B.	UC Santa Barbara	CODAR	CMI
Bevrenick, A.	High School Intern	Platform Abandonment	CMI
Bibbo, G.	UC Santa Cruz	Platform Abandonment	CMI
Blyth, J.	UC Santa Barbara	Surfgrass Restoration 2	CMI
Bremmer, J.	UC Santa Cruz	Metals 1, 2	SCEI
Brown, M.	UC Santa Barbara	Rock Crabs	CMI
Bruchal, H.	UC Santa Cruz	Metals 1	SCEI
Bucci, N.	UC Santa Barbara	Internship	CMI
Bull, Scott	UC Santa Barbara	Surfgrass Restoration 1, 2	CMI
Bullard, A.	UC Santa Cruz	Platform Abandonment	CMI
Bullock, J.	UC Santa Barbara	Carpinteria 2, Gaviota 2, Taxonomy	SCEI
Bunch, J.	UC Santa Barbara	Surfgrass Restoration 2	CMI
Burke, M.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Campeau, J.	UC Santa Barbara	Internship	CMI
Carew, J.	UC Santa Barbara	Internship	CMI
Castelli, R.	UC Santa Barbara	Rock Crabs	CMI
Chamran, F.	UC Santa Barbara	Surfgrass Restoration 2	CMI
Chan, D.	UC Santa Barbara	Kelp	SCEI
Chen, P.	UC Davis	Toxicant ID 1	SCEI
Ching, C.	UC Santa Barbara	Internship	CMI
Chopineaux, C.	UC Santa Barbara	Surfgrass Restoration 2	CMI
Clark, S.	UC Santa Cruz	Taxonomy	SCEI
Cohen, B.	UC Santa Barbara	Internship	CMI
Conklin, D.	UC Santa Barbara	Rock Crabs	CMI
Conlin, D.	UC Santa Barbara	Platform Abandonment	CMI
Countermain, B.	UC Santa Barbara	Surfgrass DNA ⁴⁸	SCEI
Cowan, K.	UC Santa Barbara	Surfgrass Restoration 1	CMI
Crick, J.	UC Santa Cruz	Metals 1, 2	SCEI

⁴⁷ Faults - PIs Kamerling, Sorlien, 1995-97

⁴⁸ Surfgrass, DNA – PIs Hodges, Bush, Reed, 1999-2000

UNDERGRADUATES - continued

Name	Campus	Project	Program
Crouch, K.	UC Santa Barbara	Internship	CMI
Crowder, M.	UC Santa Barbara	Platform Abandonment	CMI
Currier, A.	UC Davis	Toxicant ID 1	SCEI
Dai, J.	UC Berkeley	Carpinteria 2	SCEI
Daigneault, N.	UC Santa Barbara	Internship	CMI
Dean, M.	UC Santa Barbara	Internship	CMI
DeMent, A.	UC Santa Barbara	Population Trends	CMI
Dominquez, A.	UC Santa Barbara	Statistics 1	SCEI
Doubledee, R.	UC Santa Barbara	Modeling 2	CMI
Duran, R.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Edwards, M.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Eisner, B.	UC Santa Barbara	Plume	SCEI
Ellison, J.	High School Intern	Platform Abandonment	CMI
Erisman, B.	UC Santa Barbara	Platform Abandonment	CMI
Erlich, K.	UC Berkeley	Carpinteria 2	SCEI
Escher, E.	UC Santa Barbara	Internship	CMI
Esguerra, M.	UC Santa Barbara	Management	SCEI
Evans, B.	UC Santa Barbara	Gaviota 1	SCEI
Faist, C.	UC Santa Barbara	Surfgrass Restoration 2	CMI
Farrar, D.	UC Santa Barbara	Platform Abandonment	CMI
Finke, R.	UC Santa Barbara	Platform Abandonment, Rock Crabs	CMI
Flarrey, J.	UC Santa Barbara	Rock Crabs	CMI
Fogelman, R.	UC Santa Barbara	Surfgrass Restoration 2	CMI
Forbes, M.	UC Santa Cruz	Taxonomy	SCEI
Forde, S.	UC Berkeley	Plume	SCEI
Francioch, Chris	UC Santa Cruz	Taxonomy	SCEI
Francis, L.	UC Los Angeles	Shoreline Inventory 3	SCEI
Frodsham, B.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Galst, C.	UC Santa Barbara	Surfgrass Restoration 2	CMI
Garcia, A.	UC Santa Cruz	Shoreline Inventory 1, Larvae	CMI
Gee, M.	UC Santa Barbara	Internship	CMI
Gever, J.	UC Davis	Toxicant ID 1	SCEI
Gibbins, D.	UC Santa Barbara	SEMP	SCEI
Gilbertson, L.	UC Santa Barbara	Rock Crabs	CMI
Gillis, N.	UC Santa Barbara	Management	CMI
Golden, W.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Gong, N.	UC Santa Cruz	Larvae	CMI
Grass, D.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Graziani, B.	UC Santa Barbara	Surfgrass DNA	SCEI
Grebel, J.	UC Santa Barbara	Platform Abandonment	CMI
Green, S.	UC Santa Barbara	SEMP	SCEI
Greenson, N.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Grider, N.	UC Santa Barbara	Platform Abandonment	CMI
Gubbins, M.	UC Santa Barbara	SEMP	SCEI
Gusek, E.	UC Santa Barbara	Platform Abandonment	CMI
Hamura, T.	UC Santa Cruz	Taxonomy, Platform Abandonment	SCEI/CMI
Hansen, D.	UC Santa Cruz	Taxonomy	SCEI
Hansen, K.	UC Santa Barbara	Surfgrass Restoration 1, Internship	CMI
Harriet, M.	UC Santa Barbara	Surfgrass Restoration 2	CMI
Harvey, J.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI

UNDERGRADUATES - continued

Name	Campus	Project	Program
Hayden-Spear, J.	UC Santa Barbara	Surfgrass Restoration 1	CMI
Helzer, J.	UC Santa Barbara	Surfgrass Restoration 1	CMI
Hemmen, M.	UC Santa Barbara	Rock Crabs	CMI
Hoffman, B.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Huang, D.	UC Berkeley	Carpinteria 2	SCEI
Hudson, R.	UC Santa Barbara	Carpinteria 2, Gaviota 2	SCEI
Irwig, B.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Jacques, S.	UC Santa Barbara	Rock Crabs/Internship	CMI
Jeffe, M.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Jensen, E.	UC Santa Barbara	Internship	CMI
Jensen, R.	UC Santa Barbara	Internship	CMI
Jensen, S.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Johnson, E.	UC Santa Barbara	Internship	CMI
Jory, J.	UC Santa Barbara	Internship	CMI
Jung, S.	UC Berkeley	Carpinteria 2	SCEI
Kaltenberg, A.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Kayne, J.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Keedy, A.	UC Santa Barbara	Internship	CMI
Kelly, K.	UC Santa Barbara	Internship	CMI
King, R.	UC Santa Barbara	Surfgrass Restoration 2	CMI
Kneebone, J.	UC Santa Barbara	Rock Crabs	CMI
Kolster, M.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Krenz, C.	UC Santa Barbara	Carpinteria 2, Gaviota 2	SCEI
Kwong, L.	UC Davis	Biologically Degraded Oil	SCEI
Lamb, J.	UC Santa Barbara	Surfgrass Restoration 1	CMI
Landson, E.	UC Santa Barbara	Surfgrass Restoration 1	CMI
Larcina, A.	UC Santa Barbara	Rock Crabs	CMI
Larsen, S.	UC Santa Barbara	Platform Abandonment	CMI
Lee, L.	UC Davis	Biologically Degraded Oil	SCEI
Legum S.	UC Santa Barbara	Internship	CMI
Lin, H.	UC Berkeley	Carpinteria 2	SCEI
Losee, J.	UC Santa Barbara	Internship	CMI
Lynch, C.	UC Santa Barbara	Mitigation Issues, SEMP	SCEI
Makeyer, C.	UC Santa Barbara	Surfgrass Restoration 1	CMI
Mardian, B.	UC Santa Barbara	Surfgrass Restoration 1	CMI
Martinez, A.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
McGovern, T.	UC Santa Barbara	Rock Crabs	CMI
McTee, S.	UC Santa Barbara	Population Trends	CMI
Meeker, M.	UC Santa Barbara	Rock Crabs	CMI
Miller, E.	UC Davis	Toxicant ID 1	SCEI
Miyagishima, J.	UC Santa Barbara	NIMBY	SCEI
Morrow, M.	UC Berkeley	Carpinteria 2	SCEI
Morrow, M.	UC Santa Cruz	Metals 2	SCEI
Narita, K.	UC Santa Barbara	Rock Crabs	CMI
Ngugen, Q.-D.	UC Santa Barbara	Internship	CMI
Nielsen, G.	UC Santa Barbara	Surfgrass Restoration 1	CMI
O'Connor, B.	UC Santa Cruz	Taxonomy, Platform Abandonment	SCEI/CMI

UNDERGRADUATES - continued

Name	Campus	Project	Program
Ohman, C.	UC Santa Barbara	Sandy Beaches ⁴⁹ , Internship	CMI
Owings, S.	UC Santa Cruz	Shoreline Inventory 4, Larvae	SCEI/CMI
Pankey, J.	UC Santa Barbara	Platform Abandonment	CMI
Park, D.	UC Santa Barbara	Internship	CMI
Parkin, E.	UC Santa Barbara	Faults, Internship	SCEI/CMI
Parks, H.	UC Santa Cruz	Larvae	CMI
Pinkard, D.	UC Santa Barbara	Platform Abandonment	CMI
Proja, V.	UC Santa Barbara	Internship	CMI
Pruitt, S.	UC Santa Barbara	Internship	CMI
Putney, R.	UC Santa Barbara	Rock Crabs	CMI
Quinn, N.	UC Santa Barbara	Rock Crabs	CMI
Racelis, A.	UC Santa Barbara	Internship	CMI
Ramirez, R.	UC Santa Cruz	Metals 2	SCEI
Ratusch, E.	UC Berkeley	Carpinteria 2	SCEI
Renga, C.	UC Santa Barbara	Internship	CMI
Reynolds, S.	UC Santa Barbara	Platform Abandonment	CMI
Riffel, J.	UC Santa Cruz	Larvae	CMI
Robinson, C.	UC Santa Barbara	Management	SCEI
Rodriguez, H.	UC Santa Barbara	Surfgrass Restoration 2	CMI
Rodriguez, L.	UC Santa Barbara	Internship	CMI
Rossilli, A.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Rossman, A.	UC Santa Barbara	Surfgrass Restoration 2	CMI
Sabbath, D.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Salazar, L.	UC Santa Barbara	Internship	CMI
Samami, H.	UC Santa Barbara	Populations Trends	CMI
Sanchez, D.	UC Santa Barbara	Hydrocarbon Seeps	CMI
Sandstedt, C.	UC Santa Barbara	Carpinteria 2, Gaviota 2	SCEI
Sarouf S.	UC Santa Barbara	Internship	CMI
Schaff, M.	UC Santa Barbara	Internship	CMI
Schickel, E.	UC Santa Barbara	Platform Abandonment	CMI
Schloss, D.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Schlosser, J.	UC Santa Cruz	Larvae	CMI
Schmidt, K.	UC Santa Barbara	Rock Crabs, Internship, Sandy Beaches	CMI
Scholes, J.	UC Santa Barbara	Carpinteria 2, Surfgrass Restoration 1	SCEI/CMI
Shinen, J.	UC Santa Cruz	Taxonomy	SCEI
Shuman, C.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Senyak, S.	UC Santa Cruz	Larvae	CMI
Seydel, K.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Sheeter, J.	UC Santa Barbara	Internship	CMI
Shively, E.	UC Santa Barbara	Surfgrass Restoration 1	CMI
Siciliano, D.	UC Santa Barbara	Carpinteria 1, 2	SCEI
Simon, N.	UC Santa Barbara	Internship	CMI
Smith, B.	UC Santa Barbara	Surfgrass Restoration 1	CMI
Smith, D.	UC Santa Cruz	Larvae	CMI
Snyder, G.	UC Santa Barbara	Surfgrass Restoration 2	CMI
Soomekh, B.	UC Santa Barbara	Internship	CMI
Stajer, K.	UC Santa Barbara	Internship	CMI

⁴⁹ Sandy Beaches – PI Dugan, 1996-97

UNDERGRADUATES - continued

Name	Campus	Project	Program
Steichen, D.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Stein, E.	UC Santa Barbara	Internship	CMI
Stetson, S.	UC Davis	Toxicant ID 1	SCEI
Stier, J.	UC Santa Cruz	Taxonomy	SCEI
Storm, T.	UC Santa Barbara	Plume	SCEI
Tate, A.	UC Santa Barbara	Platform Abandonment	CMI
Townsend, S.	UC Santa Barbara	Carpinteria 2, Taxonomy	SCEI
Vo, H.	UC Santa Barbara	Surfgrass Restoration 1	CMI
Vredenburg, V.	UC Santa Barbara	Carpinteria 1, Gaviota 1	SCEI
Vu, T.	UC Santa Barbara	Kelp	SCEI
Wang, C.	UC Berkeley	Carpinteria 2	SCEI
Watkins, R.	UC Santa Barbara	Internship	CMI
Weisbecker, P.	UC Santa Barbara	Internship	CMI
Wilcox, A.	UC Santa Barbara	Internship	CMI
Wood, K.	UC Santa Barbara	Rock Crabs	CMI
Wood-Charlson, E.	UC Santa Cruz	Taxonomy	SCEI
Yang, C.	UC Berkeley	Carpinteria 2	SCEI
Yarborough, R.	UC Santa Barbara	Rock Crabs	CMI
Yates, J.	UC Santa Barbara	Platform Abandonment	CMI
Yonehiro, J.	UC Santa Cruz	Shoreline Inventory 4, Larvae	SCEI/CMI
Zamacona, B.	UC Santa Barbara	Surfgrass Restoration 2	CMI

**PERSONNEL INVOLVED IN THE
SOUTHERN CALIFORNIA EDUCATIONAL INITIATIVE and
COASTAL MARINE INSTITUTE**

Name	Position	Project	Program
Ammann, A.	Lab Helper/Assistant	Carpinteria 2, Platform Abandonment	SCEI/CMI
Anderson, S.	Lab Assistant	Gaviota 1	SCEI
Anghera, M.	Lab Assistant	Gaviota 1, 2, Platform Abandonment Surfgrass Restoration 1, 2, Surfgrass DNA	SCEI/CMI
Anzak, A.	Field Assistant	Shoreline Inventory 2	SCEI
Arnold, M.	Administrative Assistant	Management	CMI
Atkinson, M.	Lab Assistant	Management, Gaviota 1	SCEI
Balalis, K.	Lab Helper	Carpinteria 2, Taxonomy	SCEI
Banks, B.	Lab Assistant	Platform Abandonment	CMI
Barthelmeß, D.	Marine Tech. Director	Platform Abandonment	CMI
Berdzar, C.	Field Assistant	Shoreline Inventory 2	SCEI
Bergens, C.	Research Associate	Toxicant ID 2	SCEI
Browning, J.	ROV Operator	Platform Abandonment	CMI
Bull, S.	Lab Assistnat	Surfgrass Restoratiion	CMI
Campbell, C.	Lab Helper	Gaviota 1	SCEI
Canestro, D.	Research Associate	Gaviota 1, Carpinteria 1	SCEI
Cook, M.	Programmer Analyst	CODAR	CMI
Creese, B.	Researcher	Rock Crabs	CMI
Crick, J.	Lab Assistant	Metals 1, 2	SCEI
Crowder, M.	ROV Operator	Platform Abandonment	CMI
Cummings, R.	ROV Operator	Platform Abandonment	CMI
Diehl, E.	Researcher	Sandy Beaches	CMI
Diehl, S.	Researcher	Sandy Beaches, Rock Crabs	CMI
Eckland, M.	Biologist	Sandy Beaches	CMI
Emery, B.	Programer Analyst	CODAR	CMI
Evans, B.	Lab Helper/Assistant	Taxonomy, Carpinteria 2, Surfgrass Restoration, Decommissioning Workshop ⁵⁰	SCEI/CMI
Fitz, T.	Photographer	Rock Crabs	CMI
Forde, S.	Lab Assistant	Carpinteria 2	SCEI
Friedman, B.	Lab Assistant	Platform Abandonment	CMI
Frodsham, R	Lab Helper/Assistant	Gaviota 1, 2, Carpinteria 2, Taxonomy Platform Abandonment, Surfgrass Restoration 1	SCEI/CMI
Golden, W.	Lab Assistant	Platform Abandonment, Rock Crabs	CMI
Gorodezky, L.	Education Coordinator	Rock Crabs	CMI
Harding, J.	Lab Assistant/Research Assoc.	Platform Abandonment	CMI
Hayward, J.	ROV Tender	Platform Abandonment	CMI
Hibbard-Robbins, T.	Lab Assistant	Biologically Degraded Oil	SCEI
Hubbard, D.	Lab Assistant	Rock Crabs, Sandy Beaches Shoreline Inventory 2	CMI/SCEI
Ihrig, Britt	Lab Helper	Carpinteria 2, Gaviota 2	SCEI
Jensen, R., Ph.D.	Assistant Research Biologist	Management	SCEI
Johnson, E.	Lab Assistant	Internship	CMI
Lackey-Schaffer, N.	Lab Helper	Carpinteria 2, Gaviota 2	SCEI
Lane, A., Ph.D.	Visiting Scientist	Toxicant ID 2	SCEI

⁵⁰ Decommissioning Workshop – PI Carr, Schmitt, 1997-98

PERSONNEL - continued

Name	Position	Project	Program
Lastra, M.	Researcher	Rock Crabs, Sandy Beaches	CMI
Lee, S.	Staff Research Assistant	Shoreline Inventory 3	SCEI
Lertchareonyong, K.	Programmer	CODAR	CMI
MacDonald, L.	Lab Assistant	Platform Abandonment	CMI
Machula, J.	Lab Assistant	Biologically Degraded Oil	SCEI
Martin, D.	Research Associate.	Shoreline Inventory 1, 2 ⁵¹	CMI/SCEI
McClellan, A.	Lab Helper/Assistant	Carpinteria 2, Taxonomy, Gaviota 2, Platform Abandonment, Surfgrass Restoration 1	SCEI/CMI
Meeker, M.	Lab Assistant	Platform Abandonment	CMI
Mode, N.	Research Associate	Shoreline Inventory 1	CMI
Murdoch, H.	Lab Assistant	Management	SCEI
Nishimoto, M.	Research Associate.	Platform Abandonment	CMI
Paduan, J.	Researcher	CODAR	CMI
Pierson, M.	Biologist	Sandy Beaches	CMI
Readdie, M.	Lab Assistant	Larvae	CMI
Richard, J.	Research Biologist	Rock Crabs, Platform Abandonment Decommissioning Workshop	CMI/SCEI
Salazar, D.	Lab Assistant	CODAR	CMI
Salazar, E.	Lab Assistant	CODAR	CMI
Seydel, K.	Lab Assistant/Research Assoc.	Gaviota 1, Carpinteria 1, Population Trends	SCEI/CMI
Schickel, L.	Lab Assistant	Platform Abandonment	CMI
Shirley, K.	Research Associate	Shoreline Inventory 1	CMI
Smith, D.	Technical Assistant	Shoreline Inventory 4	SCEI
Snyder, M.	Asst. Research Biochemist	Biologically Degraded Oil	SCEI
Steenblock, Erik	Field Assistant	Shoreline Inventory 2	SCEI
Trial, A.	Research Geologist	Hydrocarbon Seeps	CMI
Williamson, B.	Assistant to the Director	Management	SCEI/CMI
Wilson, M.	Research Associate	Shoreline Inventory 1, 2, 4, Rock Crabs Rocky Intertidal Workshop ⁵²	CMI/SCEI
Zabaronick, K.	Lab Helper/Assistant	Taxonomy, Carpinteria 2, Internship Decommissioning Workshop	SCEI/CMI
Zabin, C.	Technical Assistant	Larvae	CMI
Zimmerman, E.	Student Advisor	Internship	CMI

⁵¹ Shoreline Inventory – PI Engle, 1996-99

⁵² Rocky Intertidal Workshop – PI Engle, Ambrose, Raimondi 1996-97

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RICHARD AMBROSE

Department of Environmental Health Sciences, University of California, Los Angeles, CA

Projects: *Inventory of Rocky Intertidal Resources in San Luis Obispo, Santa Barbara and Orange Counties*, CMI, 1995-97
Evaluating the Impact of Oil Spills on Southern California Rocky Intertidal Populations and Communities: Development of a Handbook, SCEI, 1996-97
Interagency Rocky Intertidal Monitoring Network Workshop, SCEI, 1996-97
Inventory of Rocky Intertidal Resources in Southern Santa Barbara, Ventura and Orange Counties, SCEI, 1998-2000

Education: B.S. University of California, Irvine 1975
Ph.D. University of California, Los Angeles 1982

Positions:
1992-present Associate Professor, Environmental Science and Engineering Program, Department of Environmental Health Sciences, University of California, Los Angeles
1991-present Associate Research Biologist, Marine Science Institute, University of California, Santa Barbara

Selected Publications:

- Stein, E.D. and R. F. Ambrose. Cumulative impacts of Section 404 Clean Water Act permitting on the riparian habitat of the Santa Margarita, CA watershed. *Wetlands*. In press.
- Ambrose, R.F. and D.J Meffert. 1999. Fish-assemblage dynamics in Malibu Lagoon, a small, hydrologically altered estuary in southern California. *Wetlands* **19**:327-340.
- Stein, E.D. and R. F. Ambrose. 1998. A rapid impact assessment method for use in a regulatory context. *Wetlands* **18**:379-392.
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- Dunaway, M.E., R.F. Ambrose, J. Campbell, J.M. Engle, M. Hill, Z. Hymanson, and D. Richards. 1997. Establishing a Southern California rocky intertidal monitoring network. Pp. 1278-1294. in: *California and the World Ocean '97*, O.T. Magoon, H. Converse, B. Baird, and M. Miller-Henson, eds. American Society of Civil Engineers, Reston, Virginia.
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- Ambrose, R.F. 1997. Ecological value in restored coastal ecosystems. Pp. 67-86 in: *Saving the Seas: Values, Scientists, and International Governance*, L.A. Brooks and S.D. VanDeveer, eds. Maryland Sea Grant College, College Park, MD.
- Allstatt, J.A., R.F. Ambrose, J.M. Engle, P.L. Haaker, K.D. Lafferty, and P.T. Raimondi. 1996. Recent declines of black abalone *Haliotis cracherodii* on the mainland coast of central California. *Marine Ecology Progress Series* **142**:185-192.
- Ambrose, R.F., R.J. Schmitt, and C. W. Osenberg. 1996. Predicted and Observed Environmental Impacts: Can We Foretell Ecological Change. Pp. 343-367 in: *Detecting Ecological Impacts: Concepts and Applications in Coastal Habitats*, R.J. Schmitt and C.W. Osenberg, eds. Academic Press, San Diego, CA.

SANJOY BANERJEE

Department of Chemical and Nuclear Engineering, University of California, Santa Barbara, CA

- Project:** *A Methodology for Investigation of Natural Hydrocarbon Gas Seepage in the Northern Santa Barbara Channel*, CMI, 1995-97
- Education:** B.S. Chemical Engineering, IIT, Kharagpur, India 1965
Ph.D. Chemical Engineering, University of Waterloo, Canada 1968
- Positions:** 1980-present Professor, Department of Chemical and Nuclear Engineering, University of California, Santa Barbara
1984-89 Chairman of the Department of Chemical and Nuclear Engineering, University of California, Santa Barbara
1989-90 Guest Professor, Swiss Federal Institute of Echnology, Zurich
1976-80 Westinghouse Professor, Department of Engineering Physics, McMaster University, Hamilton, Ontario, Canada
1979-81 Visiting Professor, Department of Nuclear Engineering, University of California, Berkeley
1968-76 Atomic Energy of Canada. Pinawa. Manitoba: ultimate position: Acting Director, Applied Science Division

Selected Publications:

- Hassa, Y.A and S. Banerjee. 1996. Implementation of a non-condensable model in Relap5/Mod3. *Nuclear Engineering and Design* **161**:281-300.
- Hu, C.Y., S. Banerjee, K. Sadra, B.G. Streeman, *et al.*, 1996. Quantization effects in inversion layers of PMOSFETS on SI(100) substrates. *IEEE Electron Device Letters* **17**:276-278.
- Kundu, P.P., S. Banerjee, K. Sadra, B.G. Streeman, *et al.*,. 1996. Studies on the miscibility of blends of polychloroprene and poly (ethylene-methyl acrylate) copolymer. *Polymer* **37**:2423-2431.
- S. Banerjee. 1994. Upwellings, downdrafts and whirlpools, dominant structures in free-surface turbulence. *App. Mech. Revs.* **47**:166-172.
- K. Lam and S. Banerjee. 1992. On the conditions of streak formation in bounded flows. *Phys. Fluids* **A4**:306-320.
- M. Rashidi, G. Herstoni and S. Banerjee. 1991. Mechanisms of heat and mass transport at gas-liquid interfaces. *Int. J. Heat Mass Transfer* **34**:1799-1810.
- S. Banerjee. 1990. Turbulence structure and transport mechanisms at interfaces, Keynote Lectures, *9th Int. Heat Transfer Conf.*, Hemisphere Press, NY, pp. 395-418.
- M. Rashidi and S. Banerjee. 1990. The effect of boundary conditions and shear rate on streak formation and breakdown in turbulent channel flows. *Physics of Fluids* **A2**:1827-1838.
- M. Rashidi and S. Banerjee. 1988. Turbulence structure in free-surface channel flows. *Physics of Fluids* **31**:2491-2503.
- S. Banerjee. 1978. A surface renewal model for interfacial heat and mass transfer in transient two-phase flows. *Int. J. Multiphase Flow* **1**:571-574.
- S. Banerjee, E. Rhodes, D.S. Scott. 1968. Mass transfer to falling wavy liquid films in turbulent flow. *Industrial and Engineering Chemistry Fundamentals* **7**:22-27.

MICHAEL L. BONNELL

Institute of Marine Sciences, University of California, Santa Cruz, CA

- Project:** *Aerial Surveys of Distribution and Abundance of Marine Birds and Mammals in Santa Barbara Channel and the Santa Maria Basin*, CMI, 1996-98
- Education:**
- | | | |
|-------|---|------|
| B.S. | Zoology, University of Idaho | 1965 |
| M.S. | Zoology, University of Idaho | 1967 |
| Ph.D. | Biology, University of California, Santa Cruz | 1977 |
- Positions:**
- | | |
|--------------|---|
| 1994-present | Specialist III, Institute of Marine Sciences, University of California, Santa Cruz |
| 1987-Present | Principal and Senior Scientist, Ecological Consulting Inc., Portland, OR |
| 1984-87 | Specialist I, Institute of Marine Sciences, University of California, Santa Cruz |
| 1975-84 | Associate Specialist III, Center for Marine Studies, University of California, Santa Cruz |

Selected Publications:

- Ford, R.G., M.L. Bonnell, D.J. Varoujean, G.W. Page, H.R. Carter, B.E. Sharp, D. Heinemann and J.L. Casey. Total direct mortality of seabirds from the *Exxon Valdez* oil spill. In: *Proceedings of the Exxon Valdez Oil Spill Symposium*, B. Wright, J. Rice, R. Spies and D. Wolfe eds. Anchorage, AK.
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- Bonnell, M.L., and M.D. Dailey. 1994. Marine Mammals. Chapter 11 In: *Ecology of the Southern California Bight*, M. Dailey, D. Reish and J. Anderson eds. University of California Press, Berkeley.
- Bowlby, C.E., G.A. Green and M.L. Bonnell. 1994. Observations of Pacific leatherback turtles offshore of Washington and Oregon. *Northwest Naturalist*.
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- Bonnell, M.L., C.E. Bowlby and G.A. Green. 1992. Pinniped distribution and abundance off Oregon and Washington, 1989-1990. Chapter 2 In: *Oregon and Washington Marine Mammal and Seabird Surveys*, J.J. Brueggeman ed. Final Report prepared for the Minerals Management Service, U.S. Dept. of the Interior. Ebasco Environmental, Bellevue, WA, and Ecological Consulting, Inc., Portland, OR.
- Briggs, K.T., D.H. Varoujean, W.A. Williams, R.G. Ford, M.L. Bonnell and J.L. Casey. 1992. Seabirds of the Oregon and Washington OCS, 1989-1990. Chapter 3 In: *Oregon and Washington Marine Mammal and Seabird Surveys*, J.J. Brueggeman ed. Final Report prepared for the Minerals Management Service, U.S. Dept. of the Interior. Ebasco Environmental, Bellevue, WA, and Ecological Consulting, Inc., Portland, OR.

ANDREW J. BROOKS

Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara, CA

Project: *Population Trends and Trophic Dynamics in Pacific OCS Ecosystems: What Can Monitoring Data Tell Us?*, CMI, 1997-2002

Education: B.A. Biology with Marine Emphasis, Occidental College 1984
Certificate Aquatic Biology and Fisheries Management,
University College of North Wales, U.K. 1987
M.A. Ecology, University of California, Santa Barbara 1993
Ph.D. Ecology, University of California, Santa Barbara 1999

Positions: 1999-present Assistant Research Biologist, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara
1999-present Post-Doctoral Researcher, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara
1990-1998: Research Assistant, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara
1988-89 Instructor Physical Oceanography, Los Angeles Valley College
1988-91 Instructor in Oceanology, Occidental College
1987-89 Marine Ecologist and Project Leader, Vantuna Research Group
1984-86 Marine Ecologist, Vantuna Research Group

Grants and Awards:

1994-1996 Mildred Mathias Grant, University of California, Santa Barbara
1994-1996 Crocker Grant
1994-1995 Continuing Graduate Student Fellowship, University of California, Santa Barbara

Publications:

- Brooks, A.J. 1999. Factors Influencing the Structure of an Estuarine Fish Community: The Role of Interspecific Competition. Ph.D. Dissertation. University of California, Santa Barbara, 219 pp.
- Nisbet, R.M., E.B. Muller, A.J. Brooks, and P. Hosseini. 1997. Models relating individual and population response to contaminants. *Environmental Modeling and Assessment* **2**:7-12.
- Love, M.S., A.J. Brooks, and J.R.R. Ally. 1996. An analysis of the commercial passenger fishing vessel fisheries for kelp and barred sand basses (*Paralabrax clathratus* and *P. nebulifer*) in the Southern California Bight. *California Fish and Game* **82**:105-121.
- Nisbet, R.M., A.H. Ross, and A.J. Brooks. 1996. Empirically-based dynamic energy budget models: theory and an application to ecotoxicology. *Nonlinear World* **3**:85-106.
- Love, M.S., A.J. Brooks, D. Busatto, J. Stephens Jr., and P. Gregory. 1996. Aspects of the life histories of the kelp bass and barred sand bass (*Paralabrax clathratus* and *P. nebulifer*) from the Southern California Bight. *Fisheries Bulletin* **94**:472-481.
- Love, M.S., J. Hyland, A. Ebeling, T. Herrlinger, A.J. Brooks, and E. Imamura. 1994. A pilot study of the distribution and abundance of rockfishes in relation to natural environmental factors and an offshore oil and gas production platform off the coast of Southern California. *Bulletin Marine Science* **55**:1062.-1085.
- Love, M.S. and A.J. Brooks. 1990. Size and age at first maturity of the California halibut, *Paralichthys californicus*, in the Southern California Bight. Pp. 167-174 in: *The California halibut, Paralichthys californicus, resource and fisheries*. California Fish and Game Fisheries Bulletin.
- Love, M.S., B. Axell, P. Morris, R. Collins, and A.J. Brooks 1987. Life history and fishery of the California scorpionfish, *Scorpaena guttata*, within the Southern California Bight. *Fisheries Bulletin* **85**:99-116.
- Brooks, A.J. 1987. Two species of Kyphosidae seen in King Harbor, Redondo Beach, California. *California Fish and Game* **73**:49-61.

DOUGLAS BUSH

Marine Science Institute, University of California, Santa Barbara, CA

Project: *Application of Genetic Techniques for use in Restoration of Surfgrass, Phyllospadix torreyi, SCEI, 1999-2000*

Education: B.A. Botany, University of Hawaii 1974
M.S. Plant Physiology, UC Berkeley 1979
Ph.D. Plant Physiology, UC Berkeley 1983
Postdoctoral Botany, UC Berkeley 1984 – 1989

Positions: 1998-Present Associate Research Biologist, Marine Science Institute, UC Santa Barbara
1998-Present Adjunct Associate Professor, Dept. Ecology, Evolution, & Marine Biology, UC Santa Barbara
1990-1997 Assistant/Associate Professor, Rutgers University, Dept. of Biological Sciences
1989-1990 Assistant Research Botanist, UC Berkeley, Dept. of Botany
1984-1989 Postdoctoral Associate, UC Berkeley, Dept. of Botany
1979-1983 Research Associate, UC Berkeley, Dept. of Plant and Soil Biology
1977-1979 Statistician, UC Berkeley, Dept. of Plant and Soil Biology

Research Interest:

Genetics of natural plant populations, Evolutionary Genetics, Plant cell biology, cell calcium and transduction of hormonal signals. Membrane transport events induced by plant growth regulators. Programmed cell death.

Awards:

- Henry Rutgers Fellow, 1990
- EMBO Workshop Fellowship, Patch Clamp Techniques, Göttingen, West Germany, 1987
- Presidents Fellowship, University of California, Berkeley, 1980-1981

Selected Publications:

- Rodriguez MT and DS Bush. 1999. Gibberellin-induced cell death in the wheat aleurone. *Plant Physiology*.
- Subbaiah C, DS Bush, and M Sachs. 1998. Mitochondria contribution to the anoxic Ca²⁺ signal in maize suspension-cultured cells. *Plant Physiology* **118**: 759-771.
- Silverman P, A Assiahmah, and DS Bush. 1997. Cytokinin action in root hairs of *Medicago sativa*. *Planta* **205**: 25-31.
- Kuo A, S Cappellutti, M Cervantes-Cervantes, M Rodriguez, and DS Bush. 1996. Okadaic acid, a protein phosphatase inhibitor, blocks calcium changes, gene expression and cell death induced by gibberellin in wheat aleurone. *The Plant Cell* **8**:259-269.
- Bush DS. 1996. Effects of gibberellic acid and environmental factors on cytosolic calcium in wheat aleurone cells. *Planta*. **199**:89-99.
- Bush DS. 1995. Calcium regulation in plant cells and its role in signaling. *Annu. Rev. Plant Physiology. Plant Molecular Biology* **46**:95-122.
- Bush DS and T Wang. 1995. Diversity of calcium efflux transporters in wheat aleurone cells. *Planta*. **197**:19-30.
- Subbaiah C, DS Bush, and M Sachs. 1994. Elevation of cytosolic calcium precedes anoxic gene expression in maize suspension-cultured cells. *The Plant Cell* **6**:1747-1762.
- Bush DS. 1993. Regulation of cytosolic calcium in plants. *Plant Physiology* **103**:7-13.
- Bush DS, AK Biswas, and RL Jones. 1993. Hormonal regulation of Ca²⁺-transport in the endomembrane system of the barley aleurone. *Planta* **189**:507-515.
- Bush DS. 1992. The role of Ca²⁺ in the action of GA in the barley aleurone. In: CM Karssen, LC Van Loon, and D Vreugdenhil, eds. "Progress in plant growth regulation: Proceedings of the 14th International conference on plant growth substances, Amsterdam, 21-26 July, 1991." pp. 96-104. Kluwer Academic Pub., Dordrecht, The Netherlands.

MARK H. CARR

Marine Science Institute, University of California, Santa Barbara, CA

Projects: *Joint UCSB-MMS Pacific OCS Student Internship and Trainee Program*, CMI, 1995-97
Ecological Consequences of Alternative Abandonment Strategies for POCS Offshore Facilities and Implications for Policy Development, CMI, 1995-98
Development of an SCEI Social and Economic Research Agenda, SCEI, 1994-95
Detecting Ecological Impacts: Effects of Taxonomic Aggregation in the Before-After/Control-Impact Paired Series Design, SCEI, 1996-99
A Workshop on the Decommissioning of Offshore Oil and Gas Facilities in California, SCEI, 1997

Education B.A. Biology, University of California, Santa Cruz 1976
M.S. San Francisco State University 1983
Ph.D. University of California, Santa Barbara 1991

Positions: 1994-present Assistant Research Biologist II, Deputy Director, SCEI and CMI, Marine Science Institute, University of California, Santa Barbara, CA.
1992-94 Post-doctoral Research Associate, Department of Zoology, Oregon State University
1993-94 Lecturer, Department of Zoology, Oregon State University
1984-1991 Graduate Research Assistant, Department of Biological Sciences, University of California, Santa Barbara
1981-1983 Research Technician, California Institute of Technology

Distinctions: 1989 Outstanding Student Paper Award, Western Society of Naturalists
1988 EPRI Fellowship, Sport Fishing Institute
1987 Joseph Drown Fellowship, University of Southern California, Oceanographic Associates

Research Interests: Population and community ecology of marine reef fishes. Application of behavioral and ecological research to marine fisheries and conservation problems.

Selected Publications:

- Carr MH, and PT Raimondi. 1999. Marine protected areas as a precautionary approach to management. CALCOFI reports.
- Reed DC, MH Carr, L Goldwasser and PT Raimondi. Role of dispersal potential in determining the spatial structure of an assemblage of sedentary marine organisms. *Ecology*.
- Reed, D.C., P.T. Raimondi and M.H. Carr. Role of dispersal potential in determining spatial variability in the abundance of benthic reef organisms. *Ecology*. Submitted.
- Anderson, T.W. and M.H. Carr. 1998. BINCKE: A highly efficient net for collecting reef-associated fishes. *Environmental Biology of Fishes* **51**:111-115.
- Allison, G., J. Lubchenco, and M.H. Carr. 1998. Marine reserves are necessary but not sufficient for marine conservation. *Ecological Applications* **8**(1):Supplement S79-S92.
- Hixon, M.A., M.H. Carr, and J.P. Beets. Artificial reefs: importance of comparisons with natural reefs. In: W. Seaman, ed., *Future Artificial Reefs in the U.S. Coastal Ocean: Can Science Resolve the Biological Enhancement Question?* Atlantic States Marine Fisheries Commission, Washington D.C. Special Report XX.
- Carr, M.H. and M.A. Hixon. 1997. Artificial reefs: the importance of comparisons with natural reefs. *Fisheries* **22**:28-33.
- Carr, M.H. and M.A. Hixon. 1995. Predation effects on early survivorship of coral reef fishes. *Marine Ecology Progress Series* **124**:31-42.
- Carr, M.H. 1994. Effects of macroalgal dynamics on recruitment of a temperate reef fish. *Ecology* **75**:1320-1333.

MARGRIET F. CASWELL

- Project:** *Estimation of Economic Effects on Aquaculture Leases of Offshore Oil Development*, SCEI, 1989-90
- Education:** B.S. Natural Resource Development, University of Rhode Island 1976
M.S. Resource Economics, University of Rhode Island 1978
Ph.D. Agricultural & Resource Economics, University of California, Berkeley 1983
- Positions:** 1990-present Researcher, US Department of Agriculture
1983-1990 Assistant Professor, Departments of Economics and Environmental Studies, University of California, Santa Barbara
- Distinctions:** 1984 Italian Council of National Research Fellowship

Selected Publications:

- Caswell, M.F. 1991. Co-development of coastal resources - oil vs. mariculture. *Contemporary Policy Issues* 9:92-102.
- Caswell, M.F. and D. Zilberman. 1990. Dynamic quality aspects of managing California's water. *Contemporary Policy Issues* 8:92-105.
- Caswell, M.F., E. Lichtenberg and D. Zilberman. 1990. The effects of pricing policies on water conservation and drainage. *American Journal of Agricultural Economics* 72:883-890.
- Caswell, M.F. 1989. The adoption of low-volume irrigation technologies as a water conservation tool. *Water International* 14:19-26.
- Caswell, M.F. and L.D. James. 1989. Institutional risk and uncertainty in irrigation water management. In: *Analysis and Management of Natural and Man-Made Hazards*, Proceedings of the Engineering Foundation Conference.
- Caswell, M.F. 1989. Better resource management through the adoption of new technologies. In: *Changing the Global Environment: Perspectives on Human Involvement*, D. Botkin, M. Caswell, J. Estes, and A. Orio, eds. Academic Press.
- Botkin, D., M.F. Caswell, J. Estes, and A. Orio, eds. 1989. *Changing the Global Environment: Perspectives on Human Involvement*. Academic Press, 459pp.
- Caswell, M.F., J. Estes *et al.* 1988. Agricultural investigations within an information systems context for the region of the Veneto, Italy. In: *Proceedings of the Twentieth International Symposium on Remote Sensing of the Environment*.
- Caswell, M.F. and D. Zilberman. 1986. The effects of well depth and land quality on the choice of irrigation technology. *American Journal of Agricultural Economics* 68:798-811.
- Caswell, M.F. and D. Zilberman. 1985. The choices of irrigation technologies in California. *American Journal of Agricultural Economics* 67:224-234.
- Caswell, M.F., D. Zilberman and G.E. Goldman. 1984. Economic implications of drip irrigation. *California Agriculture* 38:4-5.
- Caswell, M.F. and G.C. Rausser. 1983. Implications of United States experience for water resource planning in Egypt. In: *The Economic Challenges of Peace: Agriculture and Economic Transition in Egypt*, S.E. Johnson, J.R. Moore, M. Wannan eds. University of Montana Press, Columbia, pp. 48-64.

GARY N. CHERR

University of California, Davis, Bodega Marine Laboratory, Bodega Bay, CA

Projects: *Assessment of Chronic Toxicity of Petroleum and Produced Water Components to Marine Organisms*, SCEI, 1989-92
Chronic Toxicological Effects of Produced Water on Reproduction and Development in Marine Organisms, SCEI, 1992-94
Effects on Marine Organisms of Barium and Divalent Cations Associated with Oil Production, SCEI, 1994-95
Effects of Biologically Degraded Oil on Marine Invertebrate and Vertebrate Embryos and Larvae, SCEI, 1996-99

Education: B.A. Biology, Sonoma State University 1979
Ph.D. Zoology, University of California, Davis 1984

Positions: 1990-present Assistant Research Biologist IV, Bodega Marine Laboratory, University of California, Davis
1988-90 Assistant Research Biologist III, Bodega Marine Laboratory, University of California, Davis
1986-88 Assistant Research Biologist II, Bodega Marine Laboratory, University of California, Davis
1984-86 Postdoctoral Fellow, National Institute of Health, Department of Obstetrics & Gynecology, School of Medicine, University of California, Davis

Distinctions: 1984 National Institute of Health Postdoctoral Fellowship, Reproductive Training Grant
1983 Best Student Paper Award, Annual American Fisheries Society Meeting

Selected Publications:

Clegg, J.S., K.R. Uhlinger, S.A. Jackson, G.N. Cherr, E. Rifkin, and C.S. Friedman. 1998. Induced thermotolerance and the heat shock protein-70 family in the Pacific oyster, *Crassostrea gigas*. *Molecular Marine Biology and Biotechnology* **7**:21-30.

Griffin F.J., M.C. Pillai, C.A. Vines, R. Yanagimachi, and G.N. Cherr. 1998. Effects of salinity on sperm motility, fertilization, and development in the Pacific herring, *Clupea pallasii*. *Biological Bulletin* **194**:25-35.

Middaugh, D.P., M.W. Shelton, C.L. McKenney Jr., G.N. Cherr, P.J. Chapman, and L.A. Courtney. 1998. Preliminary observations on responses of embryonic and larval Pacific herring, *Clupea pallasii*, to neutral fraction biodegradation products of weathered Alaska North Slope Oil. *Archives Environmental Contamination and Toxicology* **34**:188-196.

Cherr, G.N. 1998. The use of developing organisms for assessing contamination in the marine environment. In: *Effects of Multiple Impacts on Ecosystems*, J.J. Cech, B.W. Wilson and D.C. Crosby, eds. Lewis Publishers, Chelsea, MI.

Shamseldin, A.A., J.S. Clegg, C.S. Friedman, G.N. Cherr, and M.C. Pillai. 1997. Induced thermotolerance in the Pacific oyster, *Crassostrea gigas*. *Journal of Shellfish Research*, **16**:487-491.

Garman, G.D., G.N. Cherr, and S.L. Anderson. 1997. Developmental abnormalities and DNA-protein crosslink induction in sea urchin embryos exposed to metals. *Aquatic Toxicology* **39**:247-265.

Pillai, M.C., H. Blethrow, R.M. Higashi, C.A. Vines, and G.N. Cherr. 1997. Inhibition of the sea urchin sperm acrosome reaction by a lignin-derived macromolecule. *Aquatic Toxicology* **37**:139-156.

Pillai, M.C., H. Blethrow, R.M. Higashi, C.A. Vines and G.N. Cherr. 1997. Inhibition of the sea urchin sperm acrosome reaction by a lignin-derived macromolecule. *Aquatic Toxicology* **37**:139-156.

JORDAN F. CLARK

Department of Geological Sciences, University of California, Santa Barbara, CA

Project: *A Methodology for Investigation of Natural Hydrocarbon Gas Seepage in the Northern Santa Barbara Channel*, CMI, 1995-97

Education: B.S. Geology, Yale University, New Haven Connecticut 1988
Ph.D. Columbia University, New York City, NY 1995

Positions: 1995-present Assistant Professor, University of California, Santa Barbara
1995 Post-doctoral researcher, Lamont-Doherty Earth Observatory
1994-95 Lawrence Livermore National Laboratory Graduate Fellowship
1989 Internship, Schlumberger-Doll Research, Ridgefield, CT
1988 Physical Science Technician, United States Geological Survey, Menlo Park, California

Selected Publications:

- Clark, J.F., M. Stute, P. Schlosser, S. Drenkard and G. Bonani. 1997. An isotope study of the Floridan Aquifer in Southeastern Georgia: Implications for groundwater flow and paleoclimate. *Water Resources Research* **33**:281-289.
- Clark, J.F., P. Schlosser, M. Stute and H.J. Simpson. 1996. SF⁶-₃He tracer release experiment: A new method of determining longitudinal dispersion coefficients in large rivers. *Environmental Science and Technology*. **30**:1527-1532, correction/addition 1997, **31**:308.
- Clark J.F., P. Schlosser, R. Wanninkhof, H.J. Simpson, W.S. F. Schuster, D.T. Ho. 1995. Gas transfer velocities for SF⁶ and ₃He in a small pond at low wind speeds. *Geophysical Research Letters* **22**:93-97.
- Clark, J.F., H.J. Simpson, R.F. Bopp and B. Deck. 1995. Distributions of dissolved oxygen in the lower Hudson estuary since the late 1970s. *Journal of Environmental Engineering, ASCE*. **121**:760-763.
- Clark, J.F., W.M. Smethie Jr. and H.J. Simpson. 1995. Chlorofluorocarbons in the Hudson estuary during summer months. *Water Resources Research* **31**:2553-2560.
- Stute, M. J.F. Clark, P. Schlosser, W.S. Broecker and G. Bonani. 1995. A high altitude continental paleotemperature record derived from noble gases dissolved in groundwater from the San Juan Basin, New Mexico. *Quaternary Research* **43**:209-220.
- Stute, M., M. Forser, H. Frischkorn, A. Serejor, J.F. Clark, P. Schlosser, W.S. Broecker and G. Bonani. 1995. 5°C cooling of tropical Brazil during the last glacial maximum. *Science*. **269**:379-383.
- Clark, J.F., R. Wanninkhof, P. Schlosser, H.J. Simpson. 1994. Gas exchange in the tidal Hudson River using a dual tracer technique. *Tellus Series B-Chemical and Physical Meteorology* **46B**:274-285.
- Stute, M., J.F. Clark, F.M. Phillips and D. Elmore. 1993. Reconstruction of late glacial climates from the groundwater archive: Cl and ³⁶Cl in the Carrizo aquifer, Texas. *Applications of Isotope Techniques in Studying Past and Current Environmental Changes in the Hydrosphere and the Atmosphere*, IAEA, Vienna, pp.259-270.
- Clark, J.F., H.J. Simpson, R.F. Bopp and B. Deck. 1992. Geochemistry and loading history of phosphate and silicate in the Hudson estuary. *Estuarine, Coastal and Shelf Science* **34**:213-233.
- Clark, J.F., H.J. Simpson, W.M. Smethie, Jr. and C. Toles. 1992. Gas exchange in a contaminated estuary inferred from distributions of chlorofluorocarbons. *Geophysical Research Letters* **19**:1122-1136.
- Stute, M., P. Schlosser, J.F. Clark and W.S. Broecker. 1992. Paleotemperatures in the southwestern United States derived from noble gas measurements in groundwater. *Science* **256**:1000-1003.

DONALD G. CROSBY

Department of Environmental Toxicology, University of California, Davis, CA

- Project:** *Environmental Degradation and Identification of Toxic Compounds of Petroleum and Associated Materials*, SCEI, 1898-92
- Education:** B.A. Chemistry, Pomona College 1950
Ph.D. Chemistry/Biology, California Institute of Technology 1954
- Positions:** 1992-present Professor *Emeritus*, University of California, Davis
1966-1992 Department of Environmental Toxicology, University of California, Davis:
Professor of Environmental Toxicology and Toxicologist, California Agricultural Experiment Station. Chairman, Graduate Group in Agricultural and Environmental Chemistry (1971-75, 1988-89); Executive Committee, Graduate Group in Ecology (1977-79)
1962-65 Agricultural Toxicology and Residue Research Laboratory, University of California, Davis (Chairman); Toxicologist, California Agricultural Experiment Station;
Lecturer, Department of Food Science and Technology
1954-61 Union Carbide Chemicals Co., South Charleston, West Virginia (Group Leader, Biological Chemicals Group)
- Some Major Professional Activities
1962-present National Committee on Environmental Improvement, American Chemical Society
Advisory Board, California Air Pollution Research Laboratory, Ecology Panel, Outer Continental Shelf Committee, NAS/NRC; NIEHS Evaluation Panel; Hazardous Material Advisory Committee, EPA; PCP Task Force, EPA; California State Water Resources Control Board (Advisor)
National Technical Advisory Committee, Water Quality Office, EPA

Selected Publications:

- Martello, LB, RS Tjeerdema, WS Smith, RJ Kauten, D Crosby, and others. 1998. Influence of salinity on the actions of pentachlorophenol in halibut as measured by *in vivo* ³¹P NMR spectroscopy. *Aquatic Toxicology* **41**:229-250.
- Tjeerdema, R.S., R.J. Kauten and D.G. Crosby. 1993. Interactive effects of pentachlorophenol and hypoxia in the abalone (*Haliotis rufescens*) as measured by *in vivo* ³¹P NMR spectroscopy. *Aquat. Toxicol.* **26**:117-132.
- Higashi, R.M., G.N. Cherr, J.M. Shenker, J.M. Macdonald and D.G. Crosby. 1992. A polar high molecular mass constituent of bleached kraft mill effluent is toxic to marine organisms. *Environmental Science and Technology* **26**: 2413-2420.
- Tjeerdema, R.S. and D.G. Crosby. 1992. Disposition, biotransformation, and detoxication of pentachlorophenol in the red abalone (*Haliotis rufescens*). *Xenobiotica* **22**:681-690.
- Armburst, K.L. and D.G. Crosby. 1991. Fate of Carbaryl, 1-naphthol, and atrazine in seawater. *Pacific Science* **45**:314-320.
- Higashi, R.M., G.N. Cherr and D.G. Crosby. 1991. The efficacy of enhanced photooxidation for the reduction of TOCl, color, and toxicity in mill aqueous effluents. In: *Proceedings of the 1991 TAPPI Environmental Conference*. TAPPI Press, Atlanta, GA, pp. 73-83.
- Inouye, L.S. and D.G. Crosby. 1991. Fate of model xenobiotics in calcareous marine algae. *Pacific Science* **45**:308-313.
- Tjeerdema, R.S., T.W.-M. Fan, D.G. Crosby and R.M. Higashi. 1991. Effects of pentachlorophenol on intermediary metabolism and intracellular pH in abalone (*Haliotis rufescens*) as measured by *in vivo* ³¹P NMR Spectroscopy. *J. Biochem. Toxicol.* **6**:45-56.
- Tjeerdema, R.S., R.J. Kauten and D.G. Crosby. 1991. Sublethal effects of hypoxia in the abalone (*Haliotis rufescens*) as measured by *in vivo* ³¹P NMR spectroscopy. *Comparative Biochemistry and Physiology* **100**:653-659.

ROBERT T. DEACON

Department of Economics, University of California, Santa Barbara, CA

Project: *Valuation of Coastal Resources - Understanding Substitution in Time and Space*, CMI, 1995-96

Education: B.A. University of Washington 1968
M.A. University of Washington 1971
Ph.D. University of Washington (NDEA Fellowship) 1972

Positions: 1982-present Professor of Economics, University of California, Santa Barbara
1990-91 Acting Chair, Department of Economics, University of California, Santa Barbara
1989-90 Gilbert F. White Fellow, Resources for the Future, Washington, D.C.
1980-81 Visiting Associate Professor of Economics and Environmental Studies, University of Washington
1975-76 National Fellow, Hoover Institution, Stanford University
1975 Acting Chair, Environmental Studies Program, University of California, Santa Barbara
1972-82 Assistant and Associate Professor of Economics, University of California, Santa Barbara

Selected Publications:

- Deacon, R.T. 1999. Deforestation and ownership: Evidence from historical accounts and contemporary data. *Land Economics* **75**:341-359.
- Deacon, R.T., D.S. Brookshire, A.C. Fisher, A.V. Kneese, and others. 1998. Research trends and opportunities in environmental and natural resource economics. *Environmental and Resource Economics* **11**:383-397.
- Deacon, R.T. Deforestation, investment and political stability. In: *The Economics of Conflict and Rent Seeking*, S. Skaperdis and M. Garfinkel, eds. Kluwer Academic Publishers.
- Deacon, R.T. and P. Murphy. 1997. The structure of an environmental transaction: The debt-for-nature swap. *Land Economics* **73**:1-24.
- Deacon, R.T. and P. Shapiro. 1996. Estimating the demand for public goods: Comments and extensions. In: *The Contingent Valuation of Environmental Resources: Methodological Issues and Research Needs*, D. Bjornstad and J. Kahn, eds. Edward Elgar Publishing, Ltd., Cheltenham, UK.
- Deacon, R.T. 1995. Assessing the relationship between government policy and deforestation. *Journal of Environmental Economics and Management* **28**:1-18.
- Deacon, R.T. and E. Elgar. 1995. Voting behavior, efficiency and equity. In: *Productivity Change, Public Goods, and Transaction Costs: Essays at the Boundary of Microeconomics*, Yoram Barzel, ed.. Edward Elgar Publishing Ltd., Cheltenham, UK. (Reprinted from *Public Choice*, 1975 **221**:1-14).
- Deacon, R.T. 1994. Incomplete ownership, rent dissipation, and the return to related investments. *Economic Inquiry* **32**:655-683.
- Deacon, R.T. 1994. Deforestation and the rule of law in a cross section of countries. *Land Economics* **70**:414-430.
- Deacon, R.T. and P. Murphy. 1993. Swapping debts for nature: Direct international trade in environmental services. In: *Nafta and the Environment*, T. L. Anderson, ed. Pacific Research Institute, San Francisco, pp. 69-90.
- Deacon, R.T. 1993. Taxation, depletion and welfare: A simulation study of the U.S. petroleum resource. *Journal of Environmental Economics and Management* **24**:159-187.
- Deacon, R.T. and J. Sonstelie. 1991. Price controls and rent dissipation with endogenous transaction costs. *American Economic Review* **81**:1361-1373.

JENIFER E. DUGAN

Marine Science Institute, University of California, Santa Barbara, CA

Projects: *Effect of Offshore Oil Platform Structures on the Distribution Pattern of Commercially Important Benthic Crustaceans, with Emphasis on the Rock Crab*, CMI, 1995-97
Utilization of Sandy Beaches by Shorebirds: Relationships to Population Characteristics of Macrofauna Prey Species and Beach Morphodynamics, CMI, 1996-97
Joint UCSB-MMS Pacific OCS Student Internship and Trainee Program, CMI, 1997-2000
Early Development of Fouling Communities on Offshore Oil Platforms, SCEI, 1999-2000

Education: A.A. Liberal Arts, De Anza Junior College, Cupertino, CA 1977
B.A. Aquatic Biology, University of California, Santa Barbara 1980
Ph.D. Biology, University of California, Santa Barbara 1990

Positions: 1995-present Assistant Research Biology, Marine Science Institute, University of California, Santa Barbara
1990-95 Postdoctoral Researcher, Marine Science Institute, University of California, Santa Barbara
1994 Postdoctoral Fellow, Department of Marine Science, University of Otago, New Zealand
1993 Postdoctoral Fellow, Department of Zoology, University of Port Elizabeth, Republic of South Africa
1988-93 Marine Biologist, Cooperative Park Science Unit, University of California, Davis, Channel Islands National Park, Ventura, CA

Selected Publications:

- Dugan, J.E. and D. Hubbard. Southern New Zealand Beaches. In: Natural History of Southern New Zealand. Darby, J. and W. Harrex (eds.) University of Otago Press and the Otago Museum, Dunedin, New Zealand. In press.
- Page, H.M., J.E. Dugan, D.S. Dugan, and J. Richards. 1999. Effects of an offshore oil platform on the distribution and abundance of commercially important crab species. *Mar. Ecol. Prog. Ser.* **185**:47-57.
- Dugan, J.E. and A. McLachlan. 1999. An assessment of longshore movement in *Donax serra*: Röding (Bivalvia: Donacidae) on an exposed sandy beach. *J. Exp. Mar. Bio. Ecol.* **234**:111-124.
- Barron, MG, T. Podrabsky, R.S. Ogle, J.E. Dugan, and others. 1999. Sensitivity of the sand crab *Emerita analoga* to a weathered oil. *Bull. Environmental Contamination & Toxicology* **62**:469-475.
- Barron, MG, T. Podrabsky, R.S. Ogle, J.E. Dugan, and others. 1999. Sensitivity of the mysid *Mysidopsis bahia* to a weathered oil. *Bull. Environmental Contamination & Toxicology* **62**:266-271.
- Dugan, J.E., D.M. Hubbard, and A.M. Wenner. 1998. A physical characterization of the sandy beaches of San Luis Obispo and Santa Barbara Counties. Prepared for Minerals Management Service, Camarillo, CA.
- Dugan, J.E., D.N. Hubbard, and A.M. Wenner. 1998. A catalog of the sandy beaches of San Luis Obispo and Santa Barbara Counties. Report prepared for Minerals Management Service, Camarillo, CA.
- McLachlan, A., J. Dugan, O. Defeo, A. Ansell, D. Hubbard, E. Jaramillo, and P. Penchaszadeh. 1997. Beach clam fisheries. *Ocean. Mar. Biol. Ann. Rev.* **34**:163-232.
- Dugan, J.E. and D.M. Hubbard. 1996. Local variation in populations of the sand crab *Emerita analoga* (Stimpson) on sandy beaches in southern California. *Revista Chilena de Historia Natural* **69**:579-588.
- Dugan, J.E., D.M. Hubbard and H.M. Page. 1995. Scaling population density to body size: tests in two soft sediment intertidal communities. *J. Coast. Res.* **11**:849-857.

ALFRED W. EBELING

Department of Biological Sciences, University of California, Santa Barbara, CA

- Project:** *Potential Biogenic Habitat Alteration by OCS Activities: Adverse Effects to Early Life-History Stages of Giant Kelp from Chronic Disturbance*, SCEI, 1991-93
- Education:** A.B. Zoology, University of California, Los Angeles 1953
Ph.D. Ichthyology and Biological Oceanography, University of California, Los Angeles and Scripps Institution of Oceanography 1960
- Positions:** 1994-present Professor *Emeritus*, University of California, Santa Barbara
1972-1994 Professor of Zoology, University of California, Santa Barbara
1993-94 Acting Director, Marine Science Institute, University of California, Santa Barbara
1989-1992 Vice Chair, Dept. of Biological Sciences, University of California, Santa Barbara
1984-87 Acting Director, Marine Science Institute, University of California, Santa Barbara
1966-72 Associate Professor of Zoology, University of California, Santa Barbara
1967 Visiting Professor, U.C. - University of Chile Exchange
1966 Contracts and Grants Officer, University of California, Santa Barbara
1963-66 Assistant Professor of Zoology, University of California, Santa Barbara
1963 Chief Scientist, International Indian Ocean Expedition, Biology
1961-63 Assistant Professor of Biology, Yale University
1960-61 Instructor in Zoology, Yale University
- Distinctions:** 1987 Fellow, American Association for the Advancement of Science
Fellow, American Institute of Fishery Research Biologists
Honorary Associate, Los Angeles County Museum of Natural History
1977-79 Chairperson, American Society of Zoologists, Ecology
1963-75 Member, Board of Governors, A.S.I.H.

Selected Publications:

- Reed, DC, TW Anderson, AW Ebeling, and M Anghera. 1997. The role of reproductive synchrony in the colonization potential of kelp. *Ecology* **78**:2443-2457.
- Reed DC, AW Ebeling, TW Anderson and M Anghera. 1996. Differential reproductive responses to fluctuating resources in two seaweeds with different reproductive strategies. *Ecology* **77**:300-316.
- Reed, D.C., C.D. Amsler and A.W. Ebeling. 1992. Dispersal in kelps - factors affecting spore swimming and competency. *Ecology* **73**:1577-1585.
- Ebeling, A.W. and M.A. Hixon. 1991. Tropical and temperate reef fishes: comparison of community structures. In: *The Ecology of Fishes on Coral Reefs*, P.F. Sale, ed. Academic Press, NY, pp. 509-563.
- Reed, D.C., M. Neushul and A.W. Ebeling. 1991. Role of settlement density on gametophyte growth and reproduction in the kelps *Pterygophora californica* and *Macrocystis pyrifera* (Phaeophyceae). *J. Phycol.* **27**:361-366.
- Cailliet, G.M. and A.W. Ebeling. 1990. The vertical distribution and feeding habits of two common midwater fishes (*Leuroglossus stilbius* and *Stenobranchius leucopsarus*) off Santa Barbara, California, with comments on their role in the transport of energy to the deep sea. *Rep. Calif. Cooperative Fish. Invest.* **31**:106-123.
- Eardley, D.D., C.W. Sutton, W.M. Hempel, D.C. Reed and A.W. Ebeling. 1990. Monoclonal antibodies specific for sulfated polysaccharides on the surface of *Macrocystis pyrifera* (Phaeophyceae). *J. Phycology* **26**:54-62.
- Ebeling, A.W., S.J. Holbrook and R.J. Schmitt. 1990. Temporally concordant structure of a fish assemblage: bound or determined? *American Naturalist* **135**:63-73.

JOHN M. ENGLE

Marine Science Institute, University of California, Santa Barbara, CA

Projects: *Inventory of Rocky Intertidal Resources in San Luis Obispo, Santa Barbara and Orange Counties*, CMI, 1995-97

Interagency Rocky Intertidal Monitoring Network Workshop, SCEI, 1996-97

Inventory of Rocky Intertidal Resources in San Diego County, SCEI, 1996-98

Education: B.A. Shippensburg State University, Shippensburg, Pennsylvania 1971
Ph.D. University of Southern California, Los Angeles, California 1979

Positions: 1989-present Associate Research Biologist, Department of Biological Sciences and Marine Science Institute, University of California, Santa Barbara
1980-96 Director of Research, The Tatman Foundation
1980-96 Coordinator, Channel Islands Research Program
1991-95 Biological Consultant: Chambers Group, Inc., National Geographic, Howard Hall Productions, and Edmark Corporation
1981-89 Adjunct Research Associate, University of Southern California Marine Institute
1979-89 Research Associate in Marine Zoology, Los Angeles County Museum of Natural History
1979-89 Supervisor, USC Catalina Marine Science Center Hyperbaric Chamber
1978-86 Biological Consultant: Interstate Electronics Corp., VTN Oregon, Inc., Channel Islands National Park, and Science Applications, Inc.
1977-80 Research Assistant, USC Catalina Marine Science Center Species Project
1975-77 Instructor, University of Southern California Underwater Natural History Classes

Major Interests:

- Biological surveys and long-term monitoring of intertidal and subtidal marine habitats.
- Environmental impacts on nearshore marine ecosystems in California.
- Natural history and ecology of California marine plants, invertebrates, and fishes.
- Systematics and biogeography of California marine organisms.
- Kelp/sea urchin/cup coral ecosystem dynamics.

Selected Publications:

Raimondi, P.T., R.F. Ambrose, J.M. Engle, S.N. Murray and M. Wilson. 1999. Monitoring of rocky intertidal resources along the central and southern California mainland. 3-Year Report for San Luis Obispo, Santa Barbara, and Orange Counties (Fall 1995-Spring 1998). OCS Study, MMS 99-0032, U.S. Minerals Management Service, Pacific OCS Region. 142p.

Engle, J.M., R.F. Ambrose, P.T. Raimondi, S.N. Murray, M. Wilson and S. Sapper. 1998. Rocky intertidal resources in San Luis Obispo, Santa Barbara, and Orange Counties. 1997 Annual Report. OCS Study, MMS 98-0011, U.S. Minerals Management Service, Pacific OCS Region. 73p.

Engle, J.M. 1996. *Octopus* distribution at the California Channel Islands. In: *Workshop on the fishery and market potential of Octopus in California*. University of California Sea Grant Program.

Engle, J.M. and G.E. Davis. 1996. Ecological condition and public use of the Cabrillo National Monument intertidal zone: 1990-1995. National Biological Service Report, Ventura, CA. 183p.

Engle, J.M. and G.E. Davis. 1996. Rocky intertidal resources monitoring handbook: Cabrillo National Monument, Point Loma, San Diego, California. National Biological Service Report, Ventura, CA. 38p.

Engle, J.M. and G.E. Davis. 1996. Baseline surveys of rocky intertidal ecological resources at Point Loma, San Diego. National Biological Service Report, Ventura, CA. 112p.

TERESA W.-M. FAN

Soils and Biogeochemistry Section, Department of Land, Air and Water Resources, University of California, Davis

- Projects:** *Assessment of Chronic Toxicity of Petroleum and Produced Water Components to Marine Organisms*, SCEI, 1989-92
 Chronic Toxicological Effects of Produced Water on Reproduction and Development in Marine Organisms, SCEI, 1992-94
 Characterization of Organic Constituent Patterns at a Produced Water Discharge Site/Barium Relations to Bioeffects of Produced Water, SCEI, 1994-95
 Effects on Marine Organisms of Barium and Divalent Cations Associated with Oil Production, SCEI, 1994-95

- Education:** B.S. Public Health (Environmental Science), National Taiwan University 1977
 M.S. Food Science, University of Hawaii at Manoa 1979
 Ph.D. Biochemistry, University of California, Davis 1983

- Positions:** 1989-present Assistant Research Biochemist, University of California, Davis
 1986-89 Postgraduate Research Biochemist, University of California, Davis
 1984-86 Postdoctoral Affiliate, Stanford University
 1983 Postgraduate Researcher, University of California, Davis
 1977-78 Research Assistant, University of Hawaii, Manoa

Fields of Specialization:

Environmental Biochemistry, Enzymology, Biological NMR Spectroscopy/Imaging

Areas of Interest

Biochemistry and biophysics of plants and aquatic organisms in response to environmental stresses; integration of *in vivo* and *in vitro* analytical techniques for investigations of the above processes.

Selected Publications:

- Gradwell, MJ, TWM Fan, and AN Lane. 1998. Analysis of phosphorylated metabolites in crayfish extracts by two-dimensional H-1-P-31 NMR heteronuclear total correlation spectroscopy (heteroTOCSY). *Analytical Biochemistry* **263**:139-149.
- Fan, TWM, AN Lane, D Martens, and RM Higashi. 1998. Synthesis and structure characterization of selenium metabolites. *Analyst* **123**: 875-884.
- Higashi, RM, TWM Fan, and AN Lane. 1998. Association of desferrioxamine with humic substances and their interaction with cadmium(II) as studied by pyrolysis gas chromatography mass spectrometry and nuclear magnetic resonance spectroscopy. *Analyst* **123**:911-918.
- Fan, TWM, RM Higashi, TA Frenkiel, and AN Lane. 1997. Anaerobic nitrate and ammonium metabolism in flood-tolerant rice coleoptiles. *Journal of Experimental Botany* **48**:1655-1666.
- Fan, TWM, AN Lane, J Pedler, D Crowley, D and others. 1997. Comprehensive analysis of organic ligands in whole root exudates using nuclear magnetic resonance and gas chromatography mass spectrometry. *Analytical Biochemistry* **251**:57-68.
- Fan, TWM, AN Lane, and RM Higashi. 1997. Selenium biotransformations by a euryhaline microalga isolated from a saline evaporation pond. *Environmental Science & Technology* **31**:569-576.
- Cherr, G.N., T.W.-M. Fan, M.C. Pillai, T. Shields, and R.M. Higashi. 1993. Electrophoretic separation, characterization, and quantification of biologically active lignin-derived macromolecules. *Analytical Biochemistry* **214**:521-527.
- Fan, T.W.-M., T.D. Colmer, A.N. Lane, and R.M. Higashi. 1993. Determination of metabolites by ¹H NMR and GC: analysis for organic osmolytes in crude tissue extracts. *Analytical Biochemistry* **214**:260-271.

LINDA FERNANDEZ

Donald Bren School of Environmental Science and Management, University of California, Santa Barbara, CA

Project: *The Political Economy of the Rigs-to-Reef Option for Decommissioning of Offshore Oil and Gas Structures*, SCEI, 1999-2000

Education: Ph.D. Agricultural and Resource Economics, UC Berkeley 1996
M.S. Agricultural and Resource Economics, Univ. of Hawaii 1989
B.S. International Agricultural Development, UC Davis 1985

Positions: 1997-Present Visiting Assistant Professor, School of Environmental Science and Management, UC Santa Barbara
1996-1997 Lecturer, School of Environmental Science and Management, UC Santa Barbara
1993-1996 Graduate Research Associate, Dept. of Agricultural and Resource Economics, UC Berkeley
1987-1988 Graduate Research Assistant, Water Resources Research Center and East-West Center, University of Hawaii, Honolulu.

Professional Positions:
1989-1993 Environmental Scientist, U.S. Environmental Protection Agency, Region IX, Water Management Division, San Francisco.

Grants and Awards:

University of California Toxic Substances Program, Grant for 1998
Institute on Global Conflict and Cooperation, UC San Diego, Grant for 1997-1998
Institute of Industrial Relations, UC Berkeley, Grant for 1995-1996
College of Natural Resources, UC Berkeley, Grant for 1994-1995
U.S. Environmental Protection Agency, Region IX, Grant for 1993-1994
UC Berkeley Graduate Division Fellowship, 1991-1993

Selected Publications:

- Fernandez, L and L Karp. 1998. Restoring wetlands through wetlands mitigation banks. *Environmental and Resource Economics* **12**:323-344.
- Fernandez, L. 1997. Estimation of wastewater treatment objectives through maximum entropy. *Journal of Environmental Economics and Management* **32**:293-308.
- Fernandez, L. 1997. An application of entropy estimation to public wastewater management. *Advances in Econometrics* Vol. 12.
- Fernandez, L and D. Zilberman. 1997. Trade Liberalization and the Environment in the Pacific Basin: Coordinated Approaches to Trade and Environmental Policy. *Economic Development and Cooperation in the Pacific Basin: Trade, Investment, and Environmental Issues*, H. Lee and D. Roland-Holst, eds. Cambridge University Press, New York.
- Fernandez, L. 1991. Demonstration of pesticide best management practices for controlling nonpoint source pollution in the monterey bay watershed. Proceedings from the Seventh Symposium on Coastal and Ocean Management. Long Beach, CA.
- Fernandez, L. 1991. Environmental and economic feasibility of water supply alternatives in Hawaii and California-desalination, water marketing, and conservation. Proceeding from the Seventh Symposium on Coastal and Ocean Management. Long Beach, CA.

A. RUSSELL FLEGAL

Department of Environmental Toxicology, University of California, Santa Cruz, CA

Projects: *Characterization and Fate of Produced Water Discharged in Shallow Coastal Waters*, SCEI, 1989-94
Characterization of Metal Constituent Patterns at a Produced Water Site, SCEI, 1994-95

Education: B.A. Zoology, University of California, Santa Barbara 1968
M.A. Biology, Moss Landing Marine Laboratories 1976
Ph.D. Oceanography, Oregon State University 1979
Research Fellow, Geochemistry, California Institute of Technology 1980

Positions: 1992-present Professor, Earth Science, University of California, Santa Cruz
1985-present Visiting Scientist, Lawrence Livermore National Laboratory
1989-1992 Research Geochemist, University of California, Santa Cruz
1980-1992 Visiting Associate, Geochemistry, California Institute of Technology
1989 Visiting Scientist, Swiss Federal Institute of Technology
1985-1988 Associate Research Geochemist, University of California, Santa Cruz
1985 Visiting Scientist, Geochemistry, United States Geological Survey, Denver
1980-85 Research Associate, Oceanography, Moss Landing Marine Laboratories
1978 Lecturer, Chemistry, University of California, Santa Cruz
1969-72 Captain, United States Army Corps of Engineers

Selected Publications:

- Alleman, L., A.J. Veron, T.M. Church, A.R. Flegal, and B. Hamelin. 1999. Invasion of the abyssal North Atlantic by modern anthropogenic lead. *Journal of Geophysical Research Letters* **26**: 1477-1480.
- Creasey, C.L. and A.R. Flegal. 1999. Elemental analyses of groundwater: Demonstrated applicability of low flow sampling rates and trace metal clean techniques. *Hydrogeology Journal* **7**: 161-167.
- Dunlap, C.E., E. Steinnes, and A.R. Flegal. 1999. A synthesis of lead isotopes in two millennia of European air. *Earth and Planetary Science Letters* **167**: 81-88.
- Flegal, A.R. 1999. Factors influencing C.C. Patterson's role in the evolution of the multidisciplinary field of biogeochemistry. In: *Clean Hands: Clair Patterson's Crusade Against Environmental Lead Contamination* (C.I. Davidson, ed.), Nova Science Publishers, pp. 37-46.
- Ritson, P.I., R.M. Bouse, A.R. Flegal, and S.N. Luoma. 1999. Stable lead isotopic analyses of historic and contemporary lead contamination of San Francisco Bay estuary. *Marine Chemistry* **64**: 71-83.
- Rivera-Duarte, I., A.R. Flegal, S.A. Sanudo-Wilhelmy, and A.J. Veron. 1999. Silver in the far North Atlantic Ocean. *Deep-Sea Research II* **46**: 979-990.
- Veron, A.J., T.M. Church, I. Rivera-Duarte, and A.R. Flegal. 1999. Stable lead isotopic ratios trace thermohaline circulation in the subarctic North Atlantic. *Deep-Sea Research II* **46**: 919-935.
- Veron, A.J., P. Flament, M.L. Berthos, L. Alleman, A.R. Flegal, and B. Hamelin. 1999. Isotopic evidence of pollutant lead sources in northwestern France. *Atmospheric Environment* **33**: 3377-3388.
- Flegal, A.R. 1998. Clair Patterson's influence on environmental research. *Environmental Research* **78**: 65-70.
- Owen, B.D. and A.R. Flegal, 1998. Blood lead concentrations in marine mammals validate estimates of 102 --103 - fold increase in human blood lead concentrations. *Environmental Research* **78**: 134-139.
- Veron, A.J., T.M. Church, and A.R. Flegal. 1998. Lead isotopes in the western North Atlantic: Transient tracers of pollutant lead inputs. *Environmental Research* **78**: 102-111.
- Osenberg, C.W., R.J. Schmitt, S.J. Holbrook, K.E. Abu-Saba, and A.R. Flegal. 1996. Detection of environmental impacts: natural variability, effect size, and power analysis. In: *Detecting Ecological Impacts: Concepts and Applications in Coastal Habitats*, R.J. Schmitt and C.W. Osenberg, eds. Academic Press, San Diego, CA, pp. 83-108.
- Sañudo-Wilhelmy, S.A., I. Rivera-Duarte, and A.R. Flegal. 1996. Distribution of colloidal trace metals in the San Francisco Bay estuary. *Geochimica and Cosmochimica Acta* **60**:4933-4944.

GRAHAM E. FORRESTER

Department of Biology, University of Rhode Island, Kingston, RI

Project: *Ecological Consequences of Alternative Abandonment Strategies for POCS Offshore Facilities and Implications for Policy Development*, CMI, 1995-98

Education: B.S. Zoology, University College of Wales, Aberystwyth, U.K. 1985
M.S. Zoology, University of Sydney, Australia 1988
Ph.D. Zoology, University of New Hampshire 1992

Positions: 1999-onward Assistant Professor, Department of Biology, University of Rhode Island
1995-1999 Assistant Professor, Department of Biology, University of California, Los Angeles
1993-95 Postdoctoral Research, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara
1992 Statistical Consultant, Ithaca College
1991 Research Associate, Arizona State University
1985 Research Technician, University of Wales

Distinctions: 1991-92 Dissertation Fellowship, University of New Hampshire
1989 Stoye Award
1989-1990 Summer Graduate Fellowships, University of New Hampshire
1986-88 University Postgraduate Research Scholarship, University of Sydney

Selected Publications:

O'Bryan, L. M. and G.E. Forrester. Horizontal distributions of *Chaoborus punctipennis*: documentation of patterns and tests of moonlight as a proximal controlling factor. *Hydrobiologia*.

Holbrook, S. J., G. E. Forrester and R. J. Schmitt. Spatial patterns in abundance of damselfish reflect availability of suitable habitat. *Oecologia*.

Forrester, G. E. and M. A. Steele. Variation in the presence and cause of density-dependent mortality in three species of reef fishes. *Ecology*.

Forrester, G. E., T. L. Dudley and N. B. Grimm. 1999. Trophic interactions in open systems: influences of predators and nutrients on food chains in streams. *Limnology and Oceanography* **44**:1187-1197.

Malone, J. M., G. E. Forrester and M. A. Steele. 1999. Effects of subcutaneous microtags on the growth, survival and vulnerability to predation of small reef fishes. *Journal of Experimental Marine Biology and Ecology* **237**:243-253.

Forrester, G. E. 1999. The influence of adult density on the settlement of larval coral reef fish. *Coral Reefs* **18**:85-89.

Steele, M. A., G. E. Forrester and G. R. Almany. 1998. Interactive effects of predators and conspecific density on recruitment patterns in three reef fishes. *Marine Ecology Progress Series* **172**:115-125.

O'Bryan, L.M. and G.E. Forrester. 1997. Effects of fish presence and moonlight gradients on nighttime horizontal movements of a predatory zooplankter (*Chaoborus punctipennis*). *Journal of Plankton Research* **19**:1441-1453.

Forrester, G.E. 1995. Strong density-dependent survival and recruitment regulate the abundance of a coral reef fish. *Oecologia*. **103**:275-182.

Douglas, P.L., G.E. Forrester and S.D. Cooper. 1994. Effects of trout on the diel periodicity of drifting in baetid mayflies. *Oecologia* **98**:48-56.

STEVEN D. GAINES

Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara, CA

Project: *Application of Coastal Ocean Dynamics Radars for Observation of Near-Surface Currents off the South-Central, CMI, 1996-99*

Education: B.S. Biology, University of California, Irvine 1977
Ph.D. Ecology, Oregon State University 1982

Positions: 1994-present Associate Professor, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara
1993-1994 Associate Professor, Brown University
1987-1993 Assistant Professor, Brown University
1986-1987 Research Associate, Brown University
1982-1986 Postdoctoral Fellow, Stanford University

Research Interests:

Larval ecology, interactions between ocean physics and larval dispersal, population and community ecology of marine species.

Selected Publications:

- Bertness, M.D., S.D. Gaines, and S.M. Yeh. 1998. Making mountains out of barnacles: the dynamics of hummock formation. *Ecology* **79**:1382-1394.
- Hacker, S. and S.D. Gaines. 1997. Some implications of direct positive interactions for community species diversity. *Ecology* **78**:1990-2003.
- Worcester, S. and S.D. Gaines. 1997. Quantifying hermit crab recruitment rates and larval shell selection on wave swept shores. *Marine Ecology Progress Series* **157**:307-310.
- Bertness, M., S.D. Gaines and R. Wahle. 1996. Wind-driven settlement patterns in the acorn barnacle, *Semibalanus balanoides*. *Marine Ecology Progress Series* **137**:103-110.
- Gaines, S.D. 1995. Modeling the dynamics of marine species: the importance of incorporating larval dispersal. In: *Ecology of Marine Invertebrate Larvae*, Larry McEdward, ed. CRC Press, pp. 389-412.
- Gaines, S.D. and M. Bertness. 1994. Does variable transport general variable settlement in coastal and estuarine species? In: *Changes in Fluxes in Estuaries: Implications from Science to Management*, K. Dyer and R. Orth, eds. Olsen and Olsen, London, pp. 315-322.
- Rice W.R. and S.D. Gaines. 1994. The ordered-heterogeneity test. *Biometrics* **50**:1-7.
- Rice, W.R. and S.D. Gaines. 1994. Heads I win, tails you lose: testing directional alternative hypotheses in ecological and evolutionary research. *Trends in Ecology and Evolution* **9**:235-237.
- Rice, W.R. and S.D. Gaines. 1994. Extending nondirectional heterogeneity tests to evaluate simply ordered alternative hypotheses. *Proceedings of the National Academy of Sciences* **91**:225:226.
- Sanford, E., E. Bermudez, M. Bertness and S.D. Gaines. 1994. Flow, food supply, and the population dynamics of acorn barnacles. *Marine Ecology Progress Series* **104**:49-62.
- Bertness, M. and S.D. Gaines. 1993. Larval dispersal and local adaptation in acorn barnacles. *Evolution* **47**:316-320.
- Gaines, S.D. and M. Bertness. 1993. The dynamics of juvenile dispersal: Why field ecologists must integrate. *Ecology* **74**:2430-2435.
- Gaines, S.D. and M. Denny. 1993. The largest, smallest, highest, lowest, longest, and shortest: Extremes in ecology. *Ecology* **74**:1677-1692.
- Rice, W.R. and S.D. Gaines. 1993. Calculating P-values for ANOVA with unequal variances. *Journal of Statistical Computation and Simulation* **46**:19-22.
- Bertness, M., S.D. Gaines, E. Stephens and P. Yund. 1992. Components of recruitment in populations of the acorn barnacle. *Semibalanus balanoides*. *Journal of Experimental Marine Biology and Ecology* **156**:199-215.

FRED J. GRIFFIN

Bodega Marine Laboratory, University of California, Davis, CA

Project:	<i>Effects of Biologically Degraded Oil on Marine Invertebrate and Vertebrate Embryos and Larvae</i> , SCEI, 1996-99		
Education:	B.S.	Agricultural Business Management, University of California, Davis	1970
	B.A., M.A.	Biology, Sonoma State University	1981
	Ph.D.	Zoology, University of California, Davis	1987
Positions:	1996-present	Lecturer, Division of Biological Sciences, University of California, Davis	
	1994-present	Assistant Research Biologist II, University of California, Davis	
	1986-1994	Staff Research Associate, University of California, Davis, Bodega Marine Laboratory	
	1981-1985	Research Assistant/Teaching Assistant, University of California, Davis	

Selected Publications:

- Baldwin, J.B., F.J. Griffin, and W.H. Clark, Jr. 1999. Immunological characterization of the acrosomal filament in the marine shrimp *Sicyonia ingentis*. *Zygote* **6**:329-339.
- Griffin, F.J., J.D. Baldwin, T.-I. Chen, and W.H. Clark, Jr. 1999. The composition and functions of the sperm acrosome reaction in Penaeoidean shrimp. *J. Reprod. Dev.* **44**:8.
- Griffin, F.J., M.C. Pillai, C.A. Vines, J. Kääriä, T. Hibbard-Robbins, R. Yanagimachi, and G.N. Cherr. 1998. Effects of salinity on sperm motility fertilization, and development in the Pacific herring, *Clupea pallasii*. *Biol. Bull.* **194**:25-35.
- Wang, S.W., F.J. Griffin and W.H. Clark. 1997. Cell-cell association directed mitotic spindle orientation in the early development of the marine shrimp *Sicyonia ingentis*. *Development* **124**:773-780.
- Griffin, F.J., C.A. Vines, M.C. Pillai, R. Yanagimachi, and G.N. Cherr. 1996. Sperm motility initiation factor (SMIF) is a minor component of the Pacific herring egg chorion. *Development, Growth & Differentiation* **38**:193-202.
- Clark, W.H., Jr., F.J. Griffin, and A.H. Wikramanayake. 1994. Pre-fusion events of sperm-oocyte interactions in the marine shrimp, *Sicyonia ingentis*. *Sem. Dev. Biol.* **5**:225-231.
- Clark, W.H., Jr., and F.J. Griffin. 1993. Acquisition and manipulation of Penaeoidean gametes. In: *Handbook of Techniques for Crustacean Aquaculture*, J. McVew, ed. Second Edition., Vol. 1, CRC Press, Boca Raton, pp. 133-152.
- Wikramanayake, A., K. R. Uhlinger, F.J. Griffin, and W.H. Clark, Jr. 1992. Sperm of the shrimp *Sicyonia ingentis* undergo a bi-phasic capacitation accompanied by morphological changes. *Dev. Growth & Diff* **34**:347-355.
- Keller, R., F.J. Griffin, and W.H. Clark, Jr. 1991. *Gastrulation: Movements, Patterns and Molecules*, Bodega Marine Laboratory, Marine Sciences Series 3. Plenum Press, New York.
- Clark, W.H., Jr., T.I. Chen, M.C. Pillai, K. Uhlinger, J. Shoffner-Mcgee, and F.J. Griffin. 1991. The biology of gamete activation and fertilization in *Sicyonia ingentis* (Penaeoidea); present knowledge and future direction. *Bull. Inst. Zool., Academia Sinica* **16**:553-571.
- Pillai, M.C., F.J. Griffin, and W.H. Clark, Jr. 1990. Post spawning changes in the extracellular matrices in the eggs of *Sicyonia ingentis*. In: *Advances in Invertebrate Reproduction*, M. Hoshi and O. Yamashita, eds. Vol. 5. Elsevier Science Publishers, pp. 201-207.

ROBERT T. GUZA

Scripps Institution of Oceanography, University of California, San Diego, CA

- Project:** *Wave Prediction in the Santa Barbara Channel*, CMI, 1997-99
- Education:** B.A. Physics, Johns Hopkins University 1969
M.S. Oceanography, University of California, San Diego 1971
Ph.D. Oceanography, University of California, San Diego 1974
- Positions:** 1994-present Director, Center for Coastal Studies, University of California, San Diego
1975-present Professor of Oceanography, Scripps Institution of Oceanography, University of California, San Diego
1974-75 PostDoctoral Fellow, Dalhousie University, Halifax, Nova Scotia
- Awards:** 1996 Steinbach Schole (WHOI)
1990,1994 AGU citation for excellence in refereeing
1993 AGU Fellow
1991 Outstanding Journal Paper Award, Amer. Soc. Civil Eng., Ocean Division

Selected Publications:

- Feddersen, F., R. T. Guza, S. Elgar, and T.H.C. Herbers. Alongshore bottom stress parameterizations. *J. Geophys. Res.*
- Sheremet, A., and R. T. Guza. 1999. A weakly dispersive edge wave model. *Coastal Engineering* **38**:47-52.
- Raubenheimer, B., R. T. Guza, and S. Elgar. 1999. Tidal water table fluctuations in a sandy ocean beach. *Water Res. Res.* **35**:2313-2320.
- Lentz, S., R. T. Guza, S. Elgar, F. Feddersen, and T.H.C. Herbers. 1999. Momentum balances on the North Carolina Inner Shelf. *J. Geophys. Res.* **104**:18,205-18,226.
- Chen, Y., and R. T. Guza. 1999. Resonant scattering of edge waves by longshore periodic topography: finite beach slope. *J. Fluid Mech.* **387**:255-269.
- Herbers, T.H.C., S. Elgar, and R. T. Guza. 1999. Directional spreading of waves in the nearshore. *J. Geophys. Res.-Oceans* **104**:7683-7693.
- Chen, Y., and R. T. Guza. 1998. Resonant scattering of edge waves by longshore periodic topography. *J. Fluid Mech.* **369**:91-123.
- Feddersen, F., R. T. Guza, S. Elgar, and T.H.C. Herbers. 1998. Alongshore momentum balances in the nearshore. *J. Geophys. Res.* **103**:15,667-15,676.
- Raubenheimer, B., S. Elgar, and R. T. Guza. 1998. Estimating wave heights from pressure measured in sand bed. *J. Waterway, Port, Coastal, and Ocean Eng.* **124**:151-154.
- Gallagher, E. L., S. Elgar, and R. T. Guza. 1998. Observations of sand bar evolution on a natural beach. *J. Geophys. Res.* **103**:3203-3215.
- O'Reilly, W. C., and R. T. Guza. 1998. Assimilating coastal wave observations in regional swell predictions. Part 1: Inverse methods. *J. Phys. Oceanogr.* **28**: 679-691.
- Chen, Y., R. T. Guza, and S. Elgar. 1997. Modeling spectra of breaking surface waves in shallow water. *J. Geophys. Res.*, **102**:25,035-25,046.
- Elgar, S., R. T. Guza, B. Raubenheimer, T.H.C. Herbers, and E. L. Gallagher. 1997. Spectral evolution of shoaling and breaking waves on a barred beach. *J. Geophys. Res.* **102**:15,797-15,805.
- Vanhoff, B., S. Elgar, and R. T. Guza. 1997. Numerically simulating nonGaussian sea surfaces. *J. Waterway, Port, Coastal, and Ocean Eng.* **123**:68-72.

W. MICHAEL HANEMANN

Department of Agricultural and Resource Economics, University of California, Berkeley, CA

Project: *Testing and Calibrating the Measurement of Nonmarket Values for Oil Spills Via the Contingent Valuation Method*, CMI, 1995-99

Education:

B.A.	Philosophy, Politics, and Economics, Oxford University, England	1965
M.Sc.	Development Economics, London, School of Economics	1967
M.A.	Public Finance and Decision Theory, Harvard University	1973
Ph.D.	Economics, Harvard University	1978

Positions:

1995-present	Professor, Department of Agricultural and Resource Economics, University of California, Berkeley
1984-1995	Associate Professor, Department of Agricultural and Resource Economics, University of California, Berkeley
1978-1984	Assistant Professor, Department of Agricultural and Resource Economics, University of California, Berkeley
1976	Lecturer, Department of Economics, Northeastern University, Boston, Massachusetts
1970-75	Staff Economist/Consultant, Urban Systems Research & Engineering, Inc., Cambridge, Massachusetts
1970-75	Teaching Fellow, Department of Economics, Harvard University
1967-68	Assistant to the Director, Unit for Economic and Statistical Studies on Higher Education, London School of Economics

Selected Publications:

- Hanemann, W.M. and B. Kanninen. 1999. The statistical analysis of discrete-response. In: *Valuing the Environment Preferences: Theory and Practice of the Contingent Valuation Method in the US, EU and Developing Countries*, I. Bateman and K.G. Willis, eds. Oxford University Press.
- Hanemann, W.M. 1999. The economic theory of WTP and WTA. In: *Valuing the Environment Preferences: Theory and Practice of the Contingent Valuation Method in the US, EU and Developing Countries*, I. Bateman and K.G. Willis, eds. Oxford University Press.
- Carson, R, N.E. Flores, and W.M. Hanemann. 1998. Sequencing and valuing public goods. *Journal of Environmental Economics and Management*. **36**:314-323.
- Carson, RT; WM Hanemann, RJ Kopp, JA Krosnick, and others. 1998. Referendum design and contingent valuation: The NOAA panel's no-vote recommendation. *Review of Economics and Statistics* **80**:335-338.
- Carson, RT, WM Hanemann, RJ Kopp, JA Krosnick, and others. 1998. Referendum design and contingent valuation: The NOAA panel's no-vote recommendation (vol 80, pg 335, 1998). *Review of Economics and Statistics* **80**:484-487. [Correction/Addition]
- Hanemann, W.M. 1998. Price and rate structures. Pp. 137-179, chapter 5 in: *Urban Water Demand Management and Planning*, D. Baumann, J. Boland, and M. Hanemann, eds. New York: McGraw-Hill.
- Hanemann, W.M. 1998. Determinants of urban water use. Pp. 31-75 chapter 2 in: *Urban Water Demand Management and Planning*, D. Baumann, J. Boland and M. Hanemann, eds. New York: McGraw-Hill.
- Fisher, A.C., W.M. Hanemann. 1997. Valuation of tropical forests. Pp. 505-528 in: *The Environmental and Emerging Development Issues*, K.-G. Maler and P. Dasgupta, eds. Oxford University Press.
- Carson, R.T., W.M. Hanemann, R.J. Kopp, J.A. Krosnick, R.C. Mitchell, S. Presser, P.A. Ruud, and V. K. Smith with M. Conaway, and K. Martin. 1997. Temporal reliability of estimates from contingent valuation, *Land Economics* **73**:151-163.
- Hall, D.C. and W.M. Hanemann. 1996. Urban water rate design based on marginal cost. In: *Advances in the Economics of Environmental Resources: Marginal Cost Rate Design and Whole Water Markets*, D.C. Hall, ed. CT: JAI Press, **1**:95-122.

RICHARD M. HIGASHI

Crocker Nuclear Laboratory, University of California, Davis, CA

- Projects:** *Assessment of Chronic Toxicity of Petroleum and Produced Water Components to Marine Organisms*, SCEI, 1989-92
Environmental Degradation and Identification of Toxic Compounds of Petroleum and Associated Materials, SCEI, 1989-92
Identification, Fate and Transport of Bioactive Compounds from Produced Water Discharge, SCEI, 1992-94
Characterization of Organic Constituent Patterns at a Produced Water Discharge Site/Barium Relations to Bioeffects of Produced Water, SCEI, 1994-95

- Education:** B.S. Chemistry, University of Hawaii 1977
Ph.D. Agricultural & Environmental Chemistry, University of California, Davis 1987

- Positions:** 1989-present Assistant Research Chemist, Bodega Marine Laboratory, University of California, Davis
1987-89 Postgraduate Research Chemist, University of California, Bodega Marine Laboratory
1982-87 Research Assistant, Bodega Marine Laboratory, University of California, Davis
1980-82 Staff Research Associate, Bodega Marine Laboratory, University of California, Davis

- Distinctions:** 1985 Jastro-Shields Research Scholarship

Selected Publications:

- Fan, T.W.-M., R.M. Higashi, and A.N. Lane. 1998. Biotransformations of selenium oxyanion by filamentous cyanophyte-dominated mat cultured from agricultural drainage waters. *Environmental Science and Technology* 32:3185-3193.
- Fan, T.W.-M., A.N. Lane, D. Martens, and R.M. Higashi. 1998. Synthesis and structure characterization of selenium metabolites. *The Analyst* 123:875-884.
- T.W.-M. Fan and R.M. Higashi. 1998. Biochemical fate of selenium in microphytes: natural bioremediation by volatilization and sedimentation in aquatic environments. *Environmental Chemistry of Selenium*, W.T. Frankenberger and R.A. Engberg, Eds, Marcel Dekker Inc., New York, pp. 545-563. [peer reviewed]
- Fan, T.W.-M., A.N. Lane, and R.M. Higashi. 1997. Selenium biotransformations by a euryhaline microalga isolated from a saline evaporation pond. *Environmental Science and Technology* 31:569-576.
- Pillai, M.C., H. Blethrow, R.M. Higashi, C.A. Vines, and G.N. Cherr. 1997. Inhibition of the sea urchin sperm acrosome reaction by a lignin-derived macromolecule. *Aquatic Toxicology* 37:139-156.
- Colmer, T.D., T.W.-M. Fan, R.M. Higashi and A. Läuchli. 1994. Interactions of Ca²⁺ and NaCl stress on the ion relations and intracellular pH of *Sorghum bicolor* root tips: an *in vivo* ³¹P-NMR study. *J. Exp. Botany* 45:1037-1044.
- Fan, T.W.-M., A.J. Clifford and R.M. Higashi. 1994. *In vivo* ¹³C NMR analysis of acyl carbon chain composition and organization of perirenal tricylglycerides in rats fed vegetable and fish oils. *J. Lipid Research* 35:678-689.
- Läuchli, A., T.D. Colmer, T.W.-M. Fan and R.M. Higashi. 1994. Solute regulation by calcium in salt-stressed plants. In: *NATO Advanced Research Workshop Series: Molecular and Cellular Mechanisms of Stress Tolerance in Plants*, J.H. Cherry, ed. Springer-Verlag, Berlin, pp. 443-461.
- Cherr, G.N., T.W.-M. Fan, M.C. Pillai, T. Shields, and R.M. Higashi. 1993. Electrophoretic separation, characterization, and quantification of biologically active lignin-derived macromolecules. *Analytical Biochemistry* 214:521-527.

SALLY J. HOLBROOK

Department of Biological Sciences, University of California, Santa Barbara, CA

Projects: *Ecological Effects of Chronic Exposure to Produced Water: A Field Test*, SCEI, 1989-94
Environmental Effects of Produced Water: A BACIP Field Assessment, SCEI, 1994-96
Detecting Ecological Impacts: Effects of Taxonomic Aggregation in the Before-After/Control-Impact Paired Series Design, SCEI, 1996-99
*An Experimental Evaluation of Methods of Surfgrass (*Phyllospadix torreyi*) Restoration Using Early Life History Stages*, CMI, 1998-2000

Education: B.A. Biology, Smith College 1970
Ph.D. Zoology, University of California, Berkeley 1975

Positions: 1987-present Professor, Department of Biological Sciences, University of California, Santa Barbara
1981-87 Associate Professor, Department of Biological Sciences, University of California, Santa Barbara
1975-81 Assistant Professor, Department of Biological Sciences, University of California, Santa Barbara

Selected Publications:

- Holbrook, S.J., Forrester, G.E. and R.J. Schmitt. 1999. Spatial patterns in abundance of a damselfish reflect availability of suitable habitat. *Oecologia*.
- Schmitt, R.J., S.J. Holbrook and C.W. Osenberg. 1999. Quantifying the effects of multiple processes on local abundance: A cohort approach for open populations. *Ecology Letters* **2**:294-303.
- Blanchette, C.A., Worcester, S., Reed, D. and S.J. Holbrook. 1999. Algal morphology, flow and spatially variable recruitment of surfgrass, *Phyllospadix torreyi*. *Marine Ecology Progress Series* **184**:119-128.
- Schmitt, R.J. and S.J. Holbrook. 1999. Settlement and recruitment of three damselfish species: larval delivery and competition for shelter space. *Oecologia* **118**:76-86.
- Schmitt, R.J. and S.J. Holbrook. 1999. Mortality of juvenile damselfish: implications for assessing processes that determine abundance. *Ecology* **80**:35-50.
- Schmitt, R.J. and S.J. Holbrook. 1999. Temporal patterns of settlement of three species of damselfish of the genus *Dascyllus* (Pomacentridae) in the coral reefs of French Polynesia. In: Proc. 5th Indo-Pac. Fish Conf., Nouméa, 1997 (Séret B. & J.-Y. Sire, eds), pp. 537-551. Paris: Soc. Fr. Ichtyol.
- Holbrook, S.J. and R.J. Schmitt. 1999. *In situ* nocturnal observations of reef fishes using infrared video. In: Proc. 5th Indo-Pac. Fish Conf., Nouméa, 1997 (Séret B. & J.-Y. Sire, eds), pp. 805-812. Paris: Soc. Fr. Ichtyol.
- Reed, D.C., S.J. Holbrook, E. Solomon, and M. Anghera. 1998. Studies on germination and root development in the surfgrass *Phyllospadix torreyi*: Implications for habitat restoration. *Aquatic Botany* **62**:71-80.
- Holbrook, S.J. and R.J. Schmitt. 1998. Have field experiments aided in the understanding of abundance and dynamics of reef fishes? Pp. 152-169 in: *Issues and Perspectives in Experimental Ecology*, W.J. Reserits and J. Bernado eds. Oxford University Press.
- Holbrook, S.J., R.J. Schmitt, and J.A. Stephens, Jr. 1997. Changes in an assemblage of temperate reef fishes associated with a climate shift. *Ecological Applications* **7**:1299-1310.
- Holbrook, S.J. and R.J. Schmitt. 1997. Settlement patterns and process in a coral reef damselfish: *in situ* nocturnal observations using infrared video. *Proceedings of the VIIIth International Coral Reef symposium* **2**:1143-1148.
- Holbrook, S.J. and R. J. Schmitt. 1996. On the dynamics and structure of reef fish communities: are resources tracked? In: *Long-term Studies of Vertebrate Communities*, M.L. Cody and J. A. Smallwood eds. Academic Press, pp. 19-48.
- Osenberg, C.W., R.J. Schmitt, S.J. Holbrook, K. E. Abu-Saba and A. R. Flegal. 1996. Detection of environmental impacts: natural variability, effect size, and power analysis. In: *Detecting Ecological Impacts: Concepts and Applications in Coastal Habitats*, R.J. Schmitt and C.W. Osenberg, eds. Academic Press, San Diego, CA, pp. 83-108. [Republication of Osenberg *et al.* 1994, *Ecological Applications* **4**:16-30.]

A. DANIEL JONES

Facility for Advanced Instrumentation, University of California, Davis, CA

- Projects:** *Identification, Fate and Transport of Bioactive Compounds from Produced Water Discharge*, SCEI, 1992-94
Characterization of Organic Constituent Patterns at a Produced Water Discharge Site/Barium Relations to Bioeffects of Produced Water, SCEI, 1994-95
- Education:** B.S. Chemistry, Harvey Mudd College 1976
Ph.D. Chemistry, The Pennsylvania State University 1984
- Positions:** 1990-present Assistant Adjunct Professor Department of Veterinary Pharmacology and Toxicology, School of Veterinary Medicine, University of California, Davis
1989-present Director, Facility for Advanced Instrumentation, University of California, Davis
1985-1989 Acting Director, Facility for Advanced Instrumentation, University of California, Davis
1984-1989 Assistant Research Spectroscopist, Facility for Advanced Instrumentation, University of California, Davis
1984 Visiting Assistant Professor, Department of Chemistry, Harvey Mudd College

Selected Publications:

- Witter, AE and AD Jones. 1999. Chemical characterization of organic constituents from sulfide-rich produced water using gas chromatography/mass spectrometry. *Environmental Toxicology and Chemistry* **18**: 1920-1926.
- Mitchell, AE, AD Jones, RS Mercer, RB Rucker. 1999. Characterization of pyrroloquinoline quinone amino acid derivatives by electrospray ionization mass spectrometry and detection in human milk. *Analytical Biochemistry* **269**:317-325.
- Witter, AE and AD Jones. 1998. Comparison of methods for inorganic sulfur speciation in a petroleum production effluent. *Environmental Toxicology and Chemistry* **17**:2176-2184.
- Bruenner, B.A., A.D. Jones and J.B. German. 1995. Direct characterization of protein adducts of the lipid peroxidation product 4-hydroxy-2-nonenal using electrospray ionization mass spectrometry. *Chem. Res. Toxicol.* **8**:552-559.
- Caldas, E.D., A.D. Jones, C.K. Winter, B. Ward and D.G. Gilchrist. 1995. Electrospray ionization mass spectrometry of sphinganine analog mycotoxins. *Anal.Chem.* **67**:196-207.
- Chesworth, S., G.S. Yang, D.P.Y. Chang, A.D. Jones, P.B. Kelly and L.M. Kennedy. 1995. The fate of arsenic in a laminar diffusion flame - Comments and Replies. *Combustion and Flame* **100**:516-517.
- Dai, P. G., S. McCullough-Catalano, M. Bolton, A.D. Jones and C.B. Lebrilla. 1995. Charge stripping of ligated metal ions. *Intl. J. Mass Spectrom. Ion Processes* **144**:67-77.
- Dueker, S. R.; A.D. Jones, G. M. Smith, A.J. Clifford. 1995. Preparation of [2',3',5',6'-2H4]-Pteroylglutamic acid. *J. Labelled Compds. Radiopharm.* **36**:981-991.
- Hollinger, M.A., E. Greenebaum and A.D. Jones. 1995. Detection of cocaine and benzoylecgonine in bronchoalveolar lavage fluid in crack smokers - a preliminary study. *Res. Commun. Alcohol Subst. Abuse* **16**:75-81.
- Lamé, M. W., A.D. Jones, D. Morin and H.J. Segall, D. W. Wilson. 1995. Biliary excretion of pyrrolic metabolites of [¹⁴C]monocrotaline in the rat. *Drug Metab. Disposition* **23**:422-429.
- Lin, Y., S.R. Dueker, A.D. Jones, S.E. Ebeler and A.J. Clifford. 1995. Protocol for collection and analysis of volatile carbonyls in human breath using HPLC. *Clinical Chemistry* **41**:1028-1032.
- Pinot, F., D.F. Grant, J.K. Beetham, A.G. Parker, B. Borhan, S. Landt, A.D. Jones and B.D. Hammock. 1995. Molecular and biochemical evidence for the involvement of the Asp-333_His-523 Pair in catalytic mechanisms of soluble epoxide hydrolase. *Journal Biol. Chem.* **270**:7968-7974.
- Phillips, D.A.; J. Wery, C.M. Joseph, A.D. Jones and L.R. Teuber. 1995. Release of flavonoids and betaines from seeds of seven *Medicago* species. *Crop Science* **3**:805-808.

MARC J. KAMERLING

Institute for Crustal Studies, University of California, Santa Barbara, CA

Project:	<i>Structural Evolution of the Hosgri-Purisima-Lompoc Fault System, Santa Maria Basin, California, from 3-D Map Restoration: Economic and Earthquake Hazard Implications</i> , SCEI, 1995-97		
Education	B.A.	Chemistry/Earth Science, University of California, San Diego	1972
	M.A.	Geology, University of California, Santa Barbara	1980
	Ph.D.	Geology and Geophysics, University of California, Santa Barbara	1994
Positions:	1994-present	Assistant Research Geologist, Institute for Crustal Studies, University of California, Santa Barbara	
	1993-94	Graduate Research Assistant, Institute for Crustal Studies, University of California, Santa Barbara	
	1982-93	Geologist, ARCO Oil & Gas Co., Denver CO, Plano, TX, and Bakersfield CA	
	1976-82	Research Assistant, Department of Geological Sciences, University of California, Santa Barbara	

Selected Publications:

- Sorlien, C. C., M.J. Kamerling, and D. Mayerson. 1999. Block rotation and termination of the Hosgri strike-slip fault, California, from three-dimensional map restoration. *Geology* **27**(11)
- Clark, M.S., J. Melvin, and M. Kamerling. 1996. Growth patterns of a turbidite complex in an active-margin basin, Yowlumne Field, San Joaquin Basin, California: AAPG annual convention, San Diego, CA.
- Hornafius, J .S., M.J. Kamerling, and B.P. Luyendyk. 1996. Seismic Mapping of the north Channel Fault near Santa Barbara, CA: Southern California Earthquake Center, 1995 Annual Report, v. II, p. D-13-D-17.
- Kamerling, M.J., and C. Nicholson. 1996. The Oak Ridge fault and fold system eastern Santa Barbara Channel, California: Southern California Earthquake Center, 1995 Annual Report. V. II, p. C-26-C-30.
- Elliott, W., and M.J. Kamerling. 1995. Seismic hazards in the Santa Barbara Channel using high resolution seismic reflection data and dated horizons from ODP 893 [abstract]. *EOS, Trans. AGU* **76**(46,):F417, Fall Meeting.
- Kamerling, M.J., and C. Nicholson. 1995. Reliability of 2-D kinematic models to infer deep structure in the eastern Transverse Ranges, California [abstract]. *EOS, Trans. AGU* **76**(46,):F349, Fall Meeting.
- Kamerling, M.J., and C. Nicholson. 1995. Fault geometry of blind thrusts along the Oak Ridge trend in the Santa Barbara Channel: Southern California Earthquake Center Annual Progress Report —FY 1994, v. II, p. C-12-C-15.
- Kamerling, M.J., and C. Nicholson. 1995. Geologic structure of the Oak Ridge trend in the Central Santa Barbara Channel: *in* Abstracts from the SCEC Workshop; Thrust Ramps and Detachment Faults in the Western Transverse Ranges, U.C. Santa Barbara, January 22-24, 1995, p. 15.
- Kamerling, M.J. 1994. Effects of local block rotations on the amount of paleomagnetically determined tectonic rotation of the western Transverse Ranges [abstract]. *American Association of Petroleum Geologists Bulletin* **78**:668.
- Kamerling, M.J., and C. Nicholson. 1994. The Oak Ridge Fault in the Central Santa Barbara Channel: *EOS Trans. AGU* **75**:622.
- Nicholson, C., C.C. Sorlien, T. Atwater, J.C. Crowell, M.J. Kamerling, B.P. Luyendyk and D.S. Wilson. 1993. Why did the western Transverse Range rotate? *EOS Trans. AGU* **74**:608.
- Kamerling, M.J., and A. Marino. 1992. Horizontal drilling in the Yowlumne Field. In: *Applications of horizontal drilling in California*, L. C. Knauer, ed. AAPG Pacific Section Publication MP 42, pp. 227-260.
- Kamerling, M.J., R.M. Lewy and L. Lundell. 1989. Biogenic origin of Pliocene dry gas, southern San Joaquin Basin, California [abstract]. *American Association of Petroleum Geologists Bulletin* **73**:542-543.
- Luyendyk, B.P., M.J. Kamerling, J.S. Hornafius, R. Haston, T. Ross, and J.N. Carter. 1988. Paleomagnetic studies in Neogene rocks from the Peninsular Ranges Terrane, southern California [abstract]. *Geological Society of America Abstracts with Programs* **20**:A63.

EDWARD A. KELLER

Departments of Environmental Studies and of Geological Sciences, University of California, Santa Barbara, CA

- Project:** *Joint UCSB-MMS Pacific OCS Student Internship and Trainee Program, CMI, 1995-00*
- Education:**
- | | | |
|-------|--|------|
| B.S. | Mathematics, California State University, Fresno | 1965 |
| B.A. | Geology, California State University, Fresno | 1968 |
| M.S. | Geology, University of California | 1969 |
| Ph.D. | Geology, Purdue University | 1973 |
- Positions:**
- | | |
|--------------|---|
| 1993-present | Chair of the Environmental Studies Program, University of California, Santa Barbara |
| 1976-present | Professor, Department of Geological Sciences, University of California, Santa Barbara |
| 1973-76 | Asst. Professor, Department of Environmental Studies, University of North Carolina |

Selected Publications:

- Keller EA, L Gurrola, and TE Tierney. 1999. Geomorphic criteria to determine direction of lateral propagation of reverse faulting and folding. *Geology* **27**:515-518.
- Pinter N, SB Lueddecke, EA Keller, and KR Simmons. 1998. Late Quaternary slip on the Santa Cruz Island fault, California. *Geological Society of America Bulletin* **110**:711-722.
- Keller EA, RL Zepeda, TK Rockwell, TL Ku, and others. 1998. Active tectonics at Wheeler Ridge, Southern San Joaquin Valley, California. *Geological Society of America Bulletin* **110**:298-310.
- Botkin, D.B. and E.A. Keller. 1998. *Environmental Science*. New York, John Wiley and Sons. 649 p.
- Keller EA, DW Valentine, and DR Gibbs. 1997. Hydrological response of small watersheds following the Southern California Painted Cave Fire of June 1990. *Hydrological Processes* **11**:40-414.
- Keller E. A. and N. Pinter. 1996. *Active Tectonics: Earthquakes, Uplift and Landscape*. Prentice Hall Inc., Upper Saddle River, NJ. 338p.
- Botkin, D.B. and E.A. Keller. 1995. *Environmental Science: Earth as a Living Planet*. John Wiley and Sons, New York. 627p.
- Keller, E.A. and M.H. Capelli. 1994. Reply to discussion Ventura River flood of February 1992: A lesson ignored? *Water Resources Bulletin* **29**:1.
- Keller E.A. and J.L. Florsheim. 1993. Velocity-reversal hypothesis: A model approach. *Earth Surface Processes and Landforms* **18**:733-748.
- Keller E.A. and H.A. Loaiciga. 1993. Fluid-pressure induced seismicity at regional scales. *Geophysical Research Letters* **20**:1683-1686.
- Pinter N. and E.A. Keller. 1993. Quaternary tectonic and topographic evolution of the northern Owens Valley. In: *The history of water: eastern Sierra Nevada, Owens Valley, White-Inno Mountains*. White Mountain Research Station Symposium **4**:32-39.
- Keller E.A. 1992. *Environmental Geology*, 6th ed. Macmillan Publishing Co., New York. 521 p.
- Florsheim, J.L., E.A. Keller and D.W. Best. 1991. Fluvial sediment transport in response to moderate storm flows following chaparral wildfire, Ventura County, southern California. *Geological Society of America Bulletin* **103**:504-511.
- E.A. Keller, ed. 1991. *Active Folding and Reverse Faulting in the western Transverse Ranges, southern California*. *Geol. Soc. Amer. Guidebook*. Guidebook.
- Keller, E.A., R.S. Yeats, T.K. Rockwell and D. L. Johnson. 1991. Overview of active tectonics. In: E.A. Keller, ed., *Active Folding and Reverse Faulting in the Western Transverse Ranges, Southern California*. *Geol. Soc. Amer. Guidebook*, 1991. Annual Meeting, pp. 1-12.
- Kondolf, E.M. and E.A. Keller. 1991. Management of urbanizing watersheds. In: *California Watersheds at the Urban Interface*, J.J. De Vrier, ed. Proceedings of the Third Biennial Watershed Conference. California Water Resources Center, pp. 27-39.

CHARLES D. KOLSTAD

Department of Economics and, Environmental Studies, University of California, Santa Barbara, CA

Project:	<i>Valuation of Coastal Resources - Understanding Substitution in Time and Space</i> , CMI, 1995-97		
Education:	B.S.	Bates College	1969
	M.S.	University of Rochester	1973
	Ph.D.	Stanford University	1982
Positions:	1993-present	Professor, Department of Economics and Environmental Studies, University of California, Santa Barbara	
	1983-1994	Professor, Department of Economics and Environmental Studies, University of Illinois, Urbana-Champaign.	
	Jan. 1993	Visiting Professor of Economics, Catholic University of Leuven, Belgium	
	1986-87	Visiting Asst. Professor, Department of Applied Economics, Massachusetts Institute of Technology	
	Summer 1985	Visiting Scholar, Norwegian School of Economics and Business Administration	
	1974-83	Staff Member, Economics, Los Alamos National Laboratory	

Selected Publications:

- Kolstad, C.D, and R.M. Guzman. 1999. Information and the divergence between willingness to accept and willingness to pay. *Journal Of Environmental Economics And Management* **38** :66-80.
- Kelly, DL; Kolstad, CD. 1999. Bayesian learning, growth, and pollution. *Journal Of Economic Dynamics & Control* **23** :491-518.
- Kolstad, CD. 1998. Resource and energy economics (R + EE) *Resource And Energy Economics* **20** : 303-307. [Editorial]
- Deacon, R.T., D.S. Brookshire, A.C. Fisher, A.V. Kneese, et al. 1998. Research trends and opportunities in environmental and natural resource economics. *Environmental & Resource Economics* **11**:383-397.
- Kolstad, CD; Turnovsky, MHL. 1998. Cost functions and nonlinear prices: Estimating a technology with quality-differentiated inputs. *Review Of Economics And Statistics* **80**:444-453.
- Kolstad, CD. 1997. Editor's introduction. *Resource And Energy Economics*, **19** :261-266. [Editorial]
- Kolstad, C.D. 1996. Learning and stock effects in environmental regulation: The case of greenhouse gas emissions. *J. Env. Econ. and Mgmt.* **31**:1-18.
- Kolstad, C.D. 1996. Fundamental irreversibilities in stock externalities. *J. Public Economics* **60**:221.233.
- Kolstad, C.D. 1996. The implications of learning about uncertainty for United States/European greenhouse gas policy, Chapter 14. In: *Environmental Policy with Political and Economic Integration*, J.B. Braden, H. Folmer and T.S. Ulen, eds. Edward Elgar, Cheltenham, UK.
- Kolstad, C.D. and L. Goldberg. 1995. Foreign direct investment, exchange rate variability and demand uncertainty. *Int'l Economic Review.* **36**:855-873. .
- Kolstad, C.D. 1994. The timing of CO₂ control in the face of uncertainty and learning. In: *International Environmental Economics* E.C. Evan, ed. Elsevier, Amsterdam, pp. 75-96.
- Kolstad, C.D. 1994. George Bush vs. Al Gore: Irreversibilities in greenhouse gas accumulation and emission control investment. *Energy Policy* **22**:771-778.
- Kolstad, C.D. 1994. Hotelling rents in hotelling space: Product differentiation in exhaustible resource markets. *J. Env. Econ. and Mgmt.* **26**:163-180.
- Kolstad, C.D. and J.K. Lee. 1994. Is technical change embodied in the capital stock or new investment? *J. Productivity Analysis* **5**:385-406.
- Kolstad, C.D. and J.K. Lee. 1993. The specification of dynamics in cost function and factor demand estimation. *Review of Economics and Statistics* **75**:721-26.

JON A. KROSNICK

Department of Psychology, The Ohio State University, Columbus, Ohio

- Project:** *Testing and Calibrating the Measurement of Nonmarket Values for Oil Spills Via the Contingent Valuation Method*, CMI, 1995-99
- Education:**
- | | | |
|-------|---|------|
| A.B. | Psychology (Magna Cum Laude), Harvard University | 1980 |
| M.A. | Social Psychology (with Honors), University of Michigan | 1983 |
| Ph.D. | Social Psychology, University of Michigan | 1986 |
- Positions:**
- | | |
|--------------|---|
| 1991-present | Associate Professor, Departments of Psychology and Political Science, The Ohio State University |
| 1986-1991 | Assistant Professor, Departments of Psychology and Political Science, The Ohio State University |
| 1987-1989 | Lecturer, Survey Research Center Summer Program in Survey Research Techniques, University of Michigan. |
| 1986-87 | Visiting Scholar, Survey Research Center, Institute for Social Research, University of Michigan. |
| 1985 | Lecturer, Department of Psychology, The Ohio State University |
| 1982-85 | Research Assistant, Center for Political Studies and Survey Research Center. Institute for Social Research. University of Michigan. |
| 1980-81 | Senior Research Assistant, Department of Psychology, Harvard University |
| 1979-81 | Senior Research Assistant, Department of Behavioral Sciences, School of Public Health, Harvard University |

Selected Publications:

- Krosnick, J. A. 1999. Maximizing measurement quality: Principles of good questionnaire design. In: *Measures of Political Attitudes*, J. P. Robinson, P. R. Shaver, and L. S. Wrightsman eds. New York: Academic Press.
- Visser, P. S., J.A. Krosnick, and P. Lavrakas. Survey research methods. In: *Handbook of Research Methods in Social Psychology*, H. T. Reis and C. M. Judd, eds. New York: Cambridge University Press.
- Visser, P. S., J.A. Krosnick, J. Marquette, and M. Curtin. Improving election forecasting: Allocation of undecided respondents, identification of likely voters, and response order effects. In: *Handbook of research methods in social psychology, Election polls, the news media, and democracy*, P. Lavrakas and M. Traugott, eds.
- Krosnick, J. A. 1999. Survey methodology. *Annual Review of Psychology* **50**:537-567.
- Miller, J. M., and J.A. Krosnick. 1998. The impact of candidate name order on election outcomes. *Public Opinion Quarterly* **62**:291-330.
- Visser, P. S., and J.A. Krosnick. 1998. Development of attitude strength over the life cycle: Surge and decline. *Journal of Personality and Social Psychology* **75**:1389-1410.
- Miller, J. M., J.A. Krosnick, 1997. The anatomy of the priming effect. In: *Do the media govern?: Politicians, voters, and reporters in America*, S. Iyengar and R. Reeves, eds. Thousand Oaks, CA: Sage.
- Carson, R.T., W.M. Hanemann, R.J. Kopp, J.A. Krosnick, R.C. Mitchell, S. Presser, P.A. Ruud, and V.K. Smith, with M. Conaway and K. Martin. 1997. Temporal reliability of estimates from contingent valuation. *Land Economics* **73**:151-163.
- Krosnick, J.A. and L.R. Fabrigar. 1997. Designing rating scales for effective measurement in surveys. In: *Survey Measurement and Process Quality*, L. Lyberg, M. Collins, L. Decker, E. Deleeuw, C. Dippo, N. Schwarz, and D. Trewing eds. New York: Wiley-Interscience.
- Krosnick, J.A., S.S. Narayan, and W.R. Smith. 1996. Satisficing in surveys: Initial evidence. Pp. 29-44 in: *Advances in Survey Research*, M.T. Braverman and J. K. Slater eds. San Francisco: Jossey-Bass.
- Krosnick J.A. and L.R. Fabrigar. *Designing Good Questionnaires: Insights from Cognitive and Social Psychology*. Oxford University Press.
- Visser, P.S., J.A. Krosnick, J. Marquette, M. Curtin. 1996. Mail surveys for election forecasting - an evaluation of the Columbus Dispatch poll. *Public Opinion Quarterly* **60**:181-227.

WILBERT J. LICK

Department of Mechanical and Environmental Engineering, University of California, Santa Barbara, CA

- Projects:** *Resuspension, Flocculation, and Transport of Drilling Muds and Fine-grained Sediments*, SCEI, 1989-92
Risk Analysis, SCEI, 1989-91
- Education:** B.A. Rensselaer Polytechnic Institute 1955
M.A.E. Rensselaer Polytechnic Institute 1957
Ph.D. Rensselaer Polytechnic Institute 1958
- Positions:** 1979-present Professor, Department of Mechanical and Environmental Engineering, University of California, Santa Barbara
1982-84 Chairman, Department of Mechanical and Environmental Engineering, University of California, Santa Barbara
1967-1979 Professor, Department of Engineering and Earth Sciences, Case Western Reserve University
1973-76 Chairman, Earth Sciences Department, Case Western Reserve University
1966-67 Senior Research Fellow, Applied Mathematics and Engineering, California Institute of Technology
1959-1966 Assistant Professor, Engineering, Harvard University
- Distinctions:** 1978 Fulbright-Hays Award, Senior Lectureship, Institute of Oceanography, University of Novosibirsk, U.S.S.R.
1965 Guggenheim Fellowship, Imperial College, University of London

Selected Publications:

- DePinto, J., W. Lick and J. Paul, eds. 1994. *The Transport and Transportation of Contaminants Near the Sediment-water Interface*. Lewis Publishers, Boca Raton, FL. 351p.
- Lick, W.J., C.K. Ziegler and J. Lick. 1994. The transport of fine-grained sediments in the Trenton Channel of the Detroit River. In: *The Transport and Transportation of Contaminants Near the Sediment-water Interface*, J. DePinto, W. Lick, and J. Paul, eds. Lewis Publishers, Boca Raton, FL.
- Lick, W.J. 1994. The flocculation, deposition and resuspension of fine-grained sediments. In: *The Transport and Transformation of Contaminants Near the Sediment-water Interface*. J. DePinto W. Lick, and J. Paul, eds. Lewis Publishers, Boca Raton, FL.
- Lick, W., H. Huang and R. Jepsen. 1993. Flocculation of fine-grained sediments due to differential settling. *Journal of Geophysical Research-Oceans* **98**:10279-10288.
- Lick, W., J. Lick and C.K. Ziegler. 1992. Flocculation and its effect on the vertical transport of fine-grained sediments. *Hydrobiologia* **235/236**:1-16.
- MacIntyre, S., W. Lick and C.H. Tsai. 1990. Variability of entrainment of cohesive sediments in freshwater. *Biogeochemistry* **9**:187-209.
- Burban, Y.P., Y. Xu, J. McNeil and W. Lick. 1990. Settling speeds of flocs in fresh and sea waters. *J. Geophysical Research* **95**:18213-18220.
- Burban, P.Y., W. Lick and J. Lick. 1989. The flocculation of fine-grained sediments in estuarine waters. *J. Geophysical Research* **94**:8323-8330.
- Lick, W.J. 1989. *Difference Equations From Differential Equations*. Springer-Verlag. 282p.
- Lick, W.J. and J. Lick. 1989. On the aggregation and disaggregation of fine-grained sediments. *J. Great Lakes Research* **14**:514-523.

BRUCE P. LUYENDYK

Department of Geological Sciences, University of California, Santa Barbara, CA

Project: *A Methodology for Investigation of Natural Hydrocarbon Gas Seepage in the Northern Santa Barbara Channel*, CMI, 1995-97

Education: B.S. Geophysics (Geophysics), San Diego State College 1965
Ph.D. Oceanography (Marine Geophysics) Scripps Inst. Of Oceanography 1969

Positions:

1988-present Director, Institute for Crustal Studies, University of California, Santa Barbara
1987-88 Acting Director, Institute for Crustal Studies, University of California, Santa Barbara
1981-present Professor, Department of Geological Sciences, University of California, Santa Barbara
1975-81 Associate Professor, Department of Geological Sciences, University of California, Santa Barbara
1973-75 Assistant Professor, Department of Geological Sciences, University of California, Santa Barbara
1975 (April) Visiting Professor, Department of Geology, University of Illinois, Urbana
1970-73 Assistant Scientist, Department of Geology and Geophysics, Woods Hole Oceanographic Institution
191-72 Lecturer, Department of Meteorology and Oceanography, University of Michigan, at Woods Hole
1969-70 Postdoctoral Fellow, Department of Geology and Geophysics, Woods Hole Oceanographic Institution
1969 Postgraduate Research Geologist, Scripps Institution of Oceanography
1967-68 Lecturer, San Diego State College
1965 Geophysicist (GS-7), Arctic Science and Technology laboratory, U.S. Navy Electronics Laboratory Center

Selected Publications:

- Hopson, C.A., *et al.* (BP Luyendyk fourth of eight authors). 1996. 2. Coast Range ophiolite as paleoequatorial mid-ocean lithosphere. *GSA Today* **6**:4-6.
- Luyendyk, B.P., S. Cisowski, C.H. Smith, S. Richard and D.L. Kimbrough. 1996. Paleomagnetic study of the northern Ford Ranges, western Marie Byrd Land, West Antarctica: A middle Cretaceous pole and motion between West and East Antarctica. *Tectonics* **15**:122-141.
- Schermer, E.R., B.P. Luyendyk and S. Cisowski. 1996. Late Cenozoic structure and tectonics of the northern Mojave Desert. *Tectonics* **15**:905-932.
- Luyendyk, B.P. 1995. Hypothesis for Cretaceous rifting of East Gondwana caused by subducted slab capture. *Geology* **23**:373-376.
- Luyendyk, B.P., C.S. Smith and F.C. van der Wateren. 1994. Glaciation, block faulting and volcanism in western Marie Byrd Land. *Terra Antarctica* **1**:541-543.
- Nicholson, C., C.C. Sorlien, T. Atwater, J.C. Crowell and B.P. Luyendyk. 1994. Microplate capture, rotation of the western Transverse Ranges, and initiation of the San Andreas transform as a low angle fault system. *Geology* **22**:491-495.
- Richard, S.M., C.H. Smith, D.L. Kimbrough, P.G. Fitzgerald, B.P. Luyendyk and M.O. Williams. 1994. Cooling history of the northern Ford Ranges, Marie Byrd Land, West Antarctica. *Tectonics* **13**:837-857.
- Steritz, J. And B.P. Luyendyk. 1994. Hosgri fault zone, offshore Santa Maria basin, California. In: *Seismotectonics of the central California Coast Ranges*, Alterman, I.B., R.B. McMullen, L.S. Cluff and D.B. Slemmons eds., *Geol. Soc. Amer. Spec. Paper* **292**:191-210.
- Watern, F.M. van der., B.P. Luyendyk, A.L.L.M. Verbers and C.H. Smith. 1994. Landscape evolution model of the West Antarctic Rift system relating tectonic and climatic evolutions of the rift margins. *Terra Antarctica* **1**:453-456.

SALLY MACINTYRE

Marine Science Institute, University of California, Santa Barbara, CA

Project: *Spatial Scale of Produced Water Impacts as Indicated by Plume Dynamics and Biological Field Assays*, SCEI, 1992-94

Education: A.B. Zoology, Duke University, Durham, North Carolina 1972
Ph.D. Zoology/Mech. Engineering, Duke University, Durham, North Carolina 1981

Positions: 1984-present Assistant Research Oceanographer/Limnologist, Marine Science Institute, University of California, Santa Barbara
1986-1989 Lecturer, Department of Biological Sciences, University of California, Santa Barbara
1982-1985 Assistant Research Engineer, Dept. Mechanical & Environmental Engineering, University of California, Santa Barbara
1981, 1983 Assistant Research Limnologist, Marine Science Institute, University of California, Santa Barbara
1981-1982 National Science Foundation Postdoctoral Fellow, Marine Science Institute, University of California, Santa Barbara

Distinctions: 1979 National Science Foundation National Need Predoctoral Fellowship
1979 National Research Council Predoctoral Fellowship
1976-1979 United States Geological Survey Predoctoral Fellowship
1982-1985 National Science Foundation Postdoctoral Fellowship

Selected Publications:

- MacIntyre, S; Flynn, KM; Jellison, R; Romero, JR. 1999. Boundary mixing and nutrient fluxes in Mono Lake, California. *Limnology And Oceanography*, **44** :512-529
- Washburn, L; Stone, S; MacIntyre, S. 1999. Dispersion of produced water in a coastal environment and its biological implications. *Continental Shelf Research*, **19** :57-78.
- Robarts, RD; Waiser, MJ; Hadas, O; Zohary, T; and others. 1998. Relaxation of phosphorus limitation due to typhoon-induced mixing in two morphologically distinct basins of Lake Biwa, Japan. *Limnology And Oceanography*, **43** :1023-1036.
- Scully, NM; Vincent, WF; Lean, DRS; MacIntyre, S. 1998. Hydrogen peroxide as a natural tracer of mixing in surface layers. *Aquatic Sciences*, **60** :169-186.
- MacIntyre, S., A.L. Alldredge and C.C. Gotschalk. 1995. Accumulation of marine snow at density discontinuities in the water column. *Limnology and Oceanography* **40**:449-468.
- MacIntyre, S. 1993. Mixing in the euphotic zone of a shallow, turbid lake: consequences for the phytoplankton. *Limnology and Oceanography* **38**:798-817.
- Widder, E.A., J.F. Case, S.A. Bernstein, S. MacIntyre, M.R. Lowenstine, M.R. Bowlby and D.P. Cook. In press. A new large volume bioluminescence bathyphotometer with defined turbulence excitation. *Deep Sea Research* **40**:607-627.
- Melack, J.M. and S. MacIntyre. 1992. Phosphorus concentration, supply and limitation in tropical African lakes and rivers. In: *Phosphorus Cycles in Terrestrial and Aquatic Ecosystems*. Regional Workshop 4: Africa. SCOPE and UNEP, Nairobi 1991.
- Smith, R.C., B.B. Prézelin, K.S. Baker, R.R. Bidigare, N.P. Boucer, T. Coley, D. Karentz, S. MacIntyre, H.A. Matlick, D. Menzies, M. Ondrusek, Z. Wan and K.J. Waters. 1992. Ozone Depletion: Ultraviolet Radiation and Phytoplankton Biology in Antarctic Waters. *Science* **255**:952-959.
- MacIntyre, S., W.J. Lick and C.H. Tsai. 1990. Variability of entrainment of cohesive sediments in freshwater. *Biogeochemistry* **9**:187-209.
- Crill, P.M., K.B. Bartlett, J.D. Wilson, D.K. Sebaker, R.C. Harriss, J.M. Melack, S. MacIntyre, L. Lesack and L. Smith-Morrill. 1988. Trophospheric methane from an Amazon floodplain lake. *J. Geophys. Res.* **93**:1564-1570.

MICHAEL V. MCGINNIS

Marine Science Institute, University of California, Santa Barbara, CA

Project: *Ecological Consequences of Alternative Abandonment Strategies for POCS Offshore Facilities and Implications for Policy Development*, CMI, 1995-98
The Political Economy of the Rigs-to-reef Option for Decommissioning of Offshore Oil and Gas Structures, SCEI, 1999-2000

Education: B.A. Political Science, University of California, Los Angeles 1985
M.A. Political Science, University of California, Santa Barbara 1988
Ph.D. Political Science, University of California, Santa Barbara 1993

Positions: 1996-present Co-Director and Founder, The Center for Bioregional Conflict Resolution, Santa Cruz, California
1995-present Research Political Scientist, Ocean and Coastal Policy Center, Marine Science Institute, University of California, Santa Barbara
1994 Lecturer, Department of Political Science, University of California, Santa Barbara
1992-94 Visiting Assistant Professor, Department of Political Science, University of Oregon
1992-94 Research Associate, Institute for Sustainable Environment, Department of Planning and Public Policy
1991 Technical Consultant, Santa Barbara County Energy Division
1990 Lecturer, Department of Political Science, University of California, Santa Barbara

Selected Publications:

- McGinnis, M.V., J. Woolley, and J. Gamman. 1999. Bioregional conflict resolution: Rebuilding community in watershed planning and organizing. *Environmental Management* **24**:1-12.
- McGinnis, M.V. 1999. *Bioregionalism: The Tug and Pull of Place*. London, New York: Routledge. 231 p.
- McGinnis, M.V.. 1998. An analysis of the role of ecological science in offshore continental shelf decommissioning policy. California and the World's Ocean '97. *American Society of Civil Engineers*. Chapter 181. Pp. 1384-1392.
- McGinnis, M.V. 1996. Deep ecology and the foundations of restorations. *Inquiry: An Interdisciplinary Journal of Philosophy* **39**:203-217.
- McGinnis, M.V. 1995. Bioregional organization: A constitution of home place. *Human Ecology Review* **2**:72-84.
- McGinnis, M.V. 1995. On the verge of collapse: The Columbia River system, wild salmon and the Northwest Power Planning Council. *Natural Resources Journal* **35**:520-552.
- McGinnis, M.V. 1994. Myth, nature and the bureaucratic experience. *Environmental Ethics* **16**:425-434.
- McGinnis, M.V. 1994. Collective bads: The case of low-level radioactive waste compacts. *Natural Resources Journal* **34**:563-588.
- McGinnis, M.V. 1994. The politics of restocking vs. restoring salmon in the Columbia River Basin. *Restoration Ecology* **2**:1-7.
- McGinnis, M.V. 1993. Low-level radioactive waste compacts: Cases in the illogic of collective action. In: *Problems and Prospects for Nuclear Waste Disposal Policy*, E.B. Herzik and A. Mushkatel, eds. Greenwood Press, CT.
- McGinnis, M.V. and J.T. Lima. 1993. California ocean use conflict management--An assessment of two integrating approaches. In: P.M. Griffman and J. Fawcett, eds., *International Perspective on Coastal and Ocean Space Utilization*. University of Southern California Sea Grant, CA, pp. 705-722.
- McGinnis, M.V. and W. Cohan. 1992. Ecology and international studies. In: *Revealing the World: An Interdisciplinary Reader in International Studies*, D Lieberman and M. Gurtow, eds. Kendall/Hunt Publ. Co., pp. 245-267.
- McGinnis, M.V. 1991. San Luis Obispo's measure A--check or checkmate? In: *The California Coastal Zone Experience*, G.W. Domurat and T.H. Wakeman, eds. American Society of Civil Engineers, NY, pp. 119-129.

HARVEY L. MOLOTCH

Department of Sociology, University of California, Santa Barbara, CA

Project: *An Evaluation of Current Programs to Identify and Mitigate Socioeconomic Impacts in the Santa Barbara Channel Region*, SCEI, 1991-92

Education: B.A. Philosophy, University of Michigan 1963
M.A. Sociology, University of Chicago 1966
Ph.D. Sociology, University of Chicago 1968

Positions: 1978-present Professor, Department of Sociology, University of California at Santa Barbara
1971-77 Associate Professor, Department of Sociology, University of California at Santa Barbara
1967-71 Assistant Professor, Department of Sociology, University of California at Santa Barbara

Distinctions: 1991 Sorokin Lecture, American Sociological Association
1990 Winner, Distinguished Scholarly Contribution to Sociology Award, (with coauthor John Logan) American Sociological Association
1990 Fellowship Invitation, Center for Advanced Study in the Behavioral Sciences, Stanford University
1988 Co-winner, Robert Park Award of the American Sociological Association, for the best book of 1987 in urban affairs and community studies
1975 Outstanding Planning Study for 1975, American Institute of Planners, San Francisco Chapter (for Impacts of Growth)
1973 Honorable Mention, Society for the Study of Social Problems, C. Wright Mills Award (for Managed Integration)

Selected Publications:

- Duneier, M, H Molotch. 1999. Talking city trouble: Interactional vandalism, social inequality, and the "urban interaction problem". *American Journal of Sociology* 104:1263-1295.
- Molotch, H., J. Woolley, and T. Jori. 1998. Growing firms in declining fields: Unanticipated impacts of oil development. *Society & Natural Resources*, **11** :137-156.
- Molotch, H.L. and K. Warner. Information in the Marketplace: Media explanations of the '87 crash. *Social Problems*.
- Molotch, H.L. 1996. L.A. as Product. In: *Los Angeles and Urban Theory at the End of the Twentieth Century*, A. Scott and E. Soja, eds. University of California Press, Berkeley, CA.
- Molotch, H.L. 1996. Book review: *The price of federalism*, P.E. Peterson. *American Journal of Sociology* **102**:290-291.
- Molotch, H.L. 1996. Book review: *Urban leviathan - Mexico City in the twentieth century*, D.E. Davis. *Contemporary Sociology - A Journal of Reviews* **24**:780-781.
- Beamish, T.D., H. Molotch and R. Flacks. 1995. Who supports the troops - Vietnam, the Gulf War and the making of a collective memory. *Social Problems* **42**:344-360.
- Warner, K. and H. Molotch. 1995. Power to build - how development persists despite local controls. *Urban Affairs Review* **30**:378-406.
- Molotch, H. 1994. Going out. *Sociological Forum* **9**:221-239.
- Molotch, H.L. and D. Boden. 1994. The Compulsion of Proximity. In: *NowHere: Space, Time and Modernity*, D. Boden and R. Friedland, eds. University of California Press, Berkeley, CA.
- Molotch, H.L. 1993. Book review: The production of space, H. Lefebvre. *Theory and Society* **22**:887-895.
- Molotch, H.L. 1993. The Political Economy of Growth Machines. *Journal of Urban Affairs* **15**: 29-53.

ERIC MULLER

Marine Science Institute, University of California, Santa Barbara, CA

- Project:** *Assessing Toxic Effects on Population Dynamics Using Individual-Based Energy Budget Models*, CMI, 1998-99
- Education:**
- | | | |
|-------|---|------|
| B.S. | Biology, Vrije Universiteit, Amsterdam, The Netherlands | 1986 |
| M.S. | Biology, Vrije Universiteit, Amsterdam, The Netherlands | 1988 |
| Ph.D. | Biology, Vrije Universiteit, Amsterdam, The Netherlands | 1994 |
- Positions:**
- | | |
|--------------|---|
| 1997-present | Assistant Research Biologist, Marine Science Institute, University of California, Santa Barbara |
| 1995-97 | Postdoctoral Researcher, Marine Science Institute, University of California, Santa Barbara |
| 1992-93 | Postdoctoral Researcher, TNO Institute of Environmental Sciences, Vrije Universiteit, The Netherlands |

Selected Publications:

- Muller, E.B. and R.M. Nisbet. Sublethal effects of toxicants: a dynamic energy budget modeling approach compared to experimental results. *Ecological Applications*.
- Nisbet, R.M., E.B. Muller, A.J. Brooks, and P. Hosseini. 1997. Models relating individual and population response to contaminants. *Environmental Modeling and Assessment* **2**:7-12.
- Muller, E.B. and R.M. Nisbet. 1997. Modeling the effect of toxicants on the parameters of dynamic energy budget models. Pp. 71-81 in: *Environmental Toxicology and Risk Assessment: Modeling and Risk Assessment* (Sixth Volume), F. J. Dwyer, T.R. Doane and M.L. Hinman, eds., American Society for Testing and Materials.
- Van Verseveld, H.W., E.B. Muller, and P. Groeneveld. 1996. Fast determination of residual substrate in a fermentor. Why should it be fast and how can this be done. Pp. 422-427 in: *Biothermokinetics of the Living Cell*, Westerhoff, Snoep, Sluse, Wijker, Kholodenko, eds.
- Muller, E.B., A.H. Stouthamer, and H.W. van Verseveld. 1995. Simultaneous NH₃ oxidation and N₂ production at reduced O₂ tensions by sewage sludge subcultured with chemolithotrophic medium. *Biodegradation* **6**:339-349.
- Muller, E.B., A.H. Stouthamer, and H.W. van Verseveld. 1995. A novel method to determine maximal nitrification rates by sewage sludge at a non-inhibitory nitrite concentration applied to determine maximal rates as a function of the nitrogen load. *Wat. Res.* **29**:1191-1197.
- Muller, E.B., A.H. Stouthamer, H.W. van Verseveld, and D.H. Eikelboom. 1995. Aerobic domestic wastewater treatment in a pilot plant with complete sludge retention by cross-flow filtration. *Wat. Res.* **29**:1179-1189.
- Muller, E.B. 1994. Bacterial energetics in aerobic wastewater treatment, Ph.D. thesis, Vrije Universiteit, Amsterdam, The Netherlands.
- Kooijman, S.A.L.M., E.B. Muller, and A.H. Stouthamer. 1991. Microbial growth dynamics on the basis of individual budgets. *Antonie van Leeuwenhoek* **60**:159-174.

WILLIAM W. MURDOCH

Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara, CA

Project:	<i>Ecological Effects of Chronic Exposure to Produced Water: A Field Test</i> , SCEI, 1989-94		
Education:	B.S.	Zoology, University of Glasgow, Scotland	1960
	Ph.D.	Population Ecology, Oxford University, England	1963
Positions:	1974-present	Professor, Department of Biology, University of California, Santa Barbara	
	1969-74	Associate Professor, Department of Biology, University of California, Santa Barbara	
	1965-69	Assistant Professor, Department of Biology, University of California, Santa Barbara	
Distinctions:	2 Citation Classics		
	1990	Robert H. MacArthur Award, the Ecological Society of America	
	1985	President's Award, American Society of Naturalists	
	1977-78	Guggenheim Fellowship	

Selected Publications:

- Kendall, BE, CJ Briggs, WW Murdoch, P Turchin, P, and others. 1999. Why do populations cycle? A synthesis of statistical and mechanistic modeling approaches. *Ecology* **80**:1789-1805.
- Briggs, CJ, RM Nisbet, and WW Murdoch. 1999. Delayed feedback and multiple attractors in a host-parasitoid system. *Journal of Mathematical Biology* **38**:317-345.
- Murdoch, WW, RM Nisbet, E McCauley, AM deRoos, and others. 1998. Plankton abundance and dynamics across nutrient levels: Tests of hypotheses. *Ecology* **79**:1339-1356.
- Murdoch, WW, CJ Briggs, and RM Nisbet. 1997. Dynamical effects of host size- and parasitoid state-dependent attacks by parasitoids. *Journal of Animal Ecology* **66**:542-556.
- Gurney, W.S.C., D.A.J. Middleton, R.M. Nisbet, E. McCauley, W.W. Murdoch, and A.M. DeRoos. 1996. Individual energetics and the equilibrium demography of structured populations. *Theor. Pop. Biol.* **49**:344-368.
- Murdoch, W.W. and C.J. Briggs. 1996. Theory for biological control - recent developments. *Ecology* **77**:2001-2013.
- Murdoch, W.W., C.J. Briggs and R.M. Nisbet. 1996. Competitive displacement and biological control in parasitoids - a model. *American Naturalist* **148**:807-826.
- Murdoch, W.W., S.L. Swarbrick, R.F. Luck and S. Walde. 1996. Refuge dynamics and metapopulations - an experimental test. *American Naturalist* **147**:424-444.
- Shea, K., R.M. Nisbet, W.W. Murdoch and H.J. Yoo. 1996. The effect of egg limitation in insect host-parasitoid population models. *Journal of Animal Ecology* **65**:743-755.
- Briggs, C.J., R.M. Nisbet, W.W. Murdoch and T.R. Collier. 1995. Dynamical effects of host-feeding in parasitoids. *Journal of Animal Ecology* **64**:403-416.
- Murdoch, W.W., R.F. Luck, S.L. Swarbrick and S. Walde. 1995. Regulation of an insect population under biological control. *Ecology* **76**:206-217.
- Nisbet, R.M., W.W. Murdoch and A. Stewart-Oaten. 1996. Consequences for adult-fish stocks of human-induced mortality of immatures. In: *Detecting Ecological Impacts: Concepts and Applications in Coastal Habitats*, R.J. Schmitt and C.W. Osenberg, eds. Academic Press, San Diego, CA, pp. 257-277.
- Stewart-Oaten, A., W.W. Murdoch and S.J. Walde. 1995. Estimation of temporal variability in populations. *American Naturalist* **146**:519-535.
- Collier, T.R., W.W. Murdoch and R.M. Nisbet. 1994. Egg load and the decision to host-feed in the parasitoid, *Aphytis melinus*. *J. Animal Ecology* **63**:299-306.
- Nisbet, R.M., C.J. Briggs, W.S.C. Gurney, W.W. Murdoch and A. Stewart-Oaten. 1994. Two patch metapopulation dynamics. In: *Patch Dynamics in Terrestrial, Freshwater and Marine Ecosystems*. S.L. Levin, T. Powell and J. Steele, eds. Springer-Verlag Notes in Biomathematics. Springer-Verlag, New York.

MICHAEL NEUSHUL*

Department of Biological Sciences, University of California, Santa Barbara, CA

- Project:** *Potential Biogenic Habitat Alteration by OCS Activities: Adverse Effects to Early Life-History Stages of Giant Kelp from Chronic Disturbance*, SCEI, 1991-93
- Education:** B.A. University of California, Los Angeles 1955
Ph.D. University of California, Los Angeles 1959
- Positions:** 1971-present Professor of Botany, University of California, Santa Barbara
1965-71 Associate Professor of Botany, University of California, Santa Barbara
1963-65 Assistant Professor of Botany, University of California, Santa Barbara
1961-63 Assistant Professor, University of Washington
1960-61 Instructor, University of Washington
- Distinctions:** 1985-86 President, Phycological Society of America
1972 Darbaker Award for meritorious studies on algae from the Botanical Society of America

Selected Publications:

- Lewis, R.J. and M. Neushul. 1995. Intergeneric hybridization among five genera of the family Lessoniaceae (Phaeophyceae) and evidence for polyploidy in a fertile pelagophycus x macrocystis hybrid. *Journal of Phycology* **31**:1012-1017.
- Lewis, R.J. and M. Neushul. 1994. Northern and southern hemisphere hybrids of *Macrocystis* (Phaeophyceae). *Journal of Phycology* **30**:346-353.
- Nyman, M.A., M.T. Brown, M. Neushul and B.W.W. Harger. 1993. Mass distribution in the fronds of *Macrocystis pyrifera* from New Zealand and California. *Hydrobiologia* **18**:57-65.
- Melo, R.A. and M. Neushul. 1993. Life history and reproductive potential of the agarophyte *Gelidium robustum* in California. *Hydrobiologia* **261**:223-229.
- Lewis, R.J., B.Y. Jiang, M. Neushul and X.G. Fei. 1993. Haploid parthenogenetic sporophytes of *Laminaria japonica* (Phaeophyceae). *Journal of Phycology* **29**:363-369.
- Neushul, M., J. Benson, B.W.W. Harger, A.C. Charters. 1992. Macroalgal farming in the sea - water motion and nitrate uptake. *Journal of Applied Phycology* **4**:255-265.
- Amsler, C.D., D.C. Reed and M. Neushul. 1992. The microclimate inhabited by algal propagules. *British Phycological Journal* **27**: 253-270.
- Reed, D.C., C.D. Amsler and A.W. Ebeling. 1992. Dispersal in kelps: factors affecting spore swimming and competency. *Ecology* **73**:1577-1585.
- Neushul, M., C.D. Amsler, D.C. Reed and R.J. Lewis. 1992. The introduction of marine plants for aquacultural purposes. In: *Movement and dispersal of biotic agents into aquatic ecosystems*, A. Rosenfield, ed. Maryland Sea Grant College, College Park, MD, p. 103-138.
- Melo, R.A., B.W.W. Harger and M. Neushul. 1991. *Gelidium* cultivation in the sea. *Hydrobiologia* **221**:91-106.
- Amsler, C.D. and M. Neushul. 1991. Photosynthetic physiology and chemical composition of spores of the kelps *Macrocystis pyrifera*, *Nereocystis luetkeana*, *Laminaria farlowii*, and *Pyerygophora californica* (Phaeophyceae). *Journal of Phycology* **27**:26-34.
- Neushul, M. 1990. Antiviral carbohydrates from marine red algae. *Hydrobiologia* **204**:99-104.
- Amsler, C.D. and M. Neushul. 1990. Nutrient stimulation of spore settlement in the kelps *Pterygophora californica* and *Macrocystis pyrifera*. *Marine Biology* **107**:297-304.
- Neushul, M., C.D. Amsler, D.C. Reed and R.J. Lewis. 1990. The introduction of marine plants for aquacultural purposes. In: *Movement and dispersal of biotic agents into aquatic ecosystems*. A. Rosenfield, ed. Maryland Sea Grant College, College Park, MD.

* Deceased - February 1993

ROGER NISBET

Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara, CA

- Project:** *Effects of Metal Toxicants on the Energy Budgets of Marine Organisms: A Modeling Approach*, SCEI, 1995-97
Assessing Toxic Effects on Population Dynamics Using Individual-Based Energy Budget Models, CMI, 1998-99
- Education:** B.Sc Physics and Theoretical Physics, University of St. Andrews 1968
Ph.D. Theoretical Physics, University of St. Andrews 1971
- Positions:** 1991-present Professor, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara
1989-1991 Professor, Department of Statistics and Modeling Science, University of Strathclyde, Scotland
1985-1989 Personal Professor in Applied Physics, University of Strathclyde. [1986-88 Chair, Department of Physics and Applied Physics, University of Strathclyde]
1985 Visiting Research Biologist, University of California, Santa Barbara
1983-1985 Reader in Applied Physics, University of Strathclyde
1977-79 Seconded from Strathclyde to University of the South Pacific, Suva, Fiji, as Senior Lecturer in School of Natural Resources
1972-1977 Lecturer in Applied Physics, University of Strathclyde
- Distinctions:** 1968-71 Carnegie Scholarship
1971-72 Nuffield Biological Scholarship
1987 Van de Klaauw Chair in Biology, University of Leiden, The Netherlands
1991 Elected Fellows of the Royal Society of Edinburg

Research Interests:

After Ph.D. research in statistical physics, Nisbet's main research interest since 1972 has been ecological modeling. Recent work has emphasized *individual-based population models* which aim to relate population dynamics to the physiology and behavior of individual members of a population; in particular methods for formulating tractable models of stage structured populations. These (and other) methods have been applied to the study of fluctuations in zooplankton populations, to investigations of stability and fluctuations in host-parasitoid systems, and to an investigation of the effects of toxicants on the dynamics of mussel populations. Individual-based and more traditional population models are being used in studies of population response to different forms of ecological stress. Over 80 refereed publications including one book and one monograph.

Selected Publications:

- De Roos, A.M., E. McCauley, R.M. Nisbet, W.S.C. Gurney, and W.W. Murdoch. What individual life histories can (and cannot) tell about population dynamics. *Aquatic Ecology*.
- Wilson, W.G., C.W. Osenberg, R.J. Schmitt, and R.M. Nisbet. 1999. Complementary foraging behavior allows coexistence of two grazers. *Ecology* **80**:2358-2372.
- Briggs, CJ, R.M. Nisbet, and W.W. Murdoch. 1999. Delayed feedback and multiple attractors in a host-parasitoid system. *Journal of Mathematical Biology* **38**:317-345.
- Nisbet, RM; de Roos, AM; Wilson, WG; Snyder, RE. 1998. Discrete consumers, small scale resource heterogeneity, and population stability. *Ecology Letters* **1**:34-37.
- Murdoch, WW, RM Nisbet, E McCauley, AM deRoos, and others. 1998. Plankton abundance and dynamics across nutrient levels: Tests of hypotheses. *Ecology* **79**:1339-1356.
- Noonburg, EG, RM Nisbet, E McCauley, and WSC Gurney. 1998. Experimental testing of dynamic energy budget models. *Functional Ecology* **12**:211-222.
- Gurney, WSC and RM Nisbet. 1998. *Ecological Dynamics*. New York, Oxford University Press. 385 p.

WILLIAM C. O'REILLY

Department of Civil and Environmental Engineering, University of California, Berkeley

- Project:** Wave Prediction in the Santa Barbara Channel, CMI, 1997-99
- Education:**
- | | | |
|-------|---|------|
| B.S. | Civil Engineering, University of Michigan | 1983 |
| B.S. | Environmental Eng., University of Michigan | 1983 |
| M.S. | Oceanography, University of California, San Diego | 1985 |
| Ph.D. | Oceanography, University of California, San Diego | 1991 |
- Positions:**
- | | |
|---------|--|
| 1997- | Visiting Lecturer, Civil and Environmental Engineering, University of California, Berkeley |
| 1996- | Research Assistant Professor, Department of Oceanography, Naval Postgraduate School, Monterey |
| 1993- | Development Engineer, Scripps Institution of Oceanography, University of California, San Diego |
| 1991-93 | Visiting Scholar, Civil Engineering Department, University of California, Berkeley |
| 1991-93 | Post-Doctoral Researcher, Scripps Institution of Oceanography, University of California, San Diego |
| 1984-91 | Research Assistant, Scripps Institution of Oceanography, University of California, San Diego |
- Awards:** 1990 Olin Mark Award, American Shore and Beach Preservation Association.

Publications:

- O'Reilly W. C., R. T. Guza, and R. J. Seymour. 1999. Wave Prediction in the Santa Barbara Channel, Proc. 5th California Islands Symposium, Mineral Management Service, Santa Barbara CA, March 29-31, 1999, In press.
- O'Reilly W. C., and R. T. Guza, 1998, Assimilating coastal wave observations into regional swell predictions. Part I: Inverse methods. *J. of Phys. Oceanogr.* **28**:679-691.
- Kaihatu, J. M., W.E. Rogers, Y.L. Hsu, and W. C. O'Reilly. 1998. Use of Phase-Resolving Numerical WaveModels in Coastal Areas, WAM Validation of Pacific Swell, Proc. 5th International Workshop on WaveHindcasting and Forecasting, Melbourne FL, January 26-30, 1998, 389-403.
- Wittmann P. A., and W. C. O'Reilly. 1998. WAM Validation of Pacific Swell, Proc. 5th International Workshop on Wave Hindcasting and Forecasting, Melbourne FL, January 26-30, 1998, 83-87.
- O'Reilly, W.C. and R.T. Guza. 1996. Assimilating coastal wave observations into regional swell predictions. Part I: Inverse methods, submitted to *J. of Phys. Ocean.*
- O'Reilly, W.C., T.H.C. Herbers, R.J. Seymour, and R.T. Guza. 1996. A comparison of directional buoy and fixed platform measurements of Pacific swell. *J. of Atmos. And Oceanic Technology* **13**:231-238.
- Elwany. M.H.S., W.C. O'Reilly, R.T. Guza, and R.E. Flick. 1995. Effects of Southern California kelp beds on waves. *J. of Waterway, Port, Coastal, and Ocean Engineering* **12**:143-150.
- Herbers. T.H.C., S. Elgar, R.T. Guza, and W.C. O'Reilly. 1995. Infragravity-frequency (0.005-0.05 Hz) motions on the shelf. Part II: Free Waves. *J. Phys. Oceanogr.* **25**:1063-1079.
- Seymour, R.J., D. McGehee, D. Castel, J. Thomas, and W.C. O'Reilly. 1993. New Technology in Coastal Wave Monitoring. P.p. 105-123 in: *Ocean Wave Measurement and Analysis, Proc. Of 2nd International Symposium*, New Orleans, LA .
- O'Reilly, W.C., R.J. Seymour, R.T. Guza, and D. Castel. 1993. Wave monitoring in the Southern California Bight. Pp. 849-863 in: *Ocean Wave Measurement and Analysis,,, Proc. Of 2nd International Symposium*, New Orleans, LA.
- O'Reilly, W.C. 1993. The southern California wave climate: effects of islands and bathymetry, *Shore and Beach* **61**:14-19.
- O'Reilly, W.C. and R.T. Guza. 1993. A comparison of spectral wave models in the Southern California Bight, *Coastal Engineering* **19**:263-282.

CRAIG W. OSENBURG

Department of Zoology, University of Florida, Gainesville, FL

- Projects:** *Ecological Effects of Chronic Exposure to Produced Water: A Field Test*, SCEI, 1989-94
Effects of Produced Water on Demographic Rates: Integration of Individual Responses with Population Consequences, SCEI, 1989-92
Spatial Scale of Produced Water Impacts as Indicated by Plume Dynamics and Biological Field Assays, SCEI, 1992-94
Environmental Effects of Produced Water: A BACIP Field Assessment, SCEI, 1994-96
Environmental Recovery Following Cessation of a Produced Water Discharge, SCEI, 1994-96
Detecting Ecological Impacts: Effects of Taxonomic Aggregation in the Before-After/Control-Impact Paired Series Design, SCEI, 1996-99
- Education:** B.A. Biology, University of California, Santa Barbara (*summa cum laude*) 1980
Ph.D. Ecology, Michigan State University 1988
- Positions:** 1995-present Assistant Professor, Department of Zoology, University of Florida
1991-1995 Assistant Professor, Department of Integrative Biology, University of California, Berkeley
1989-present Assistant Research Biologist, Marine Science Institute, University of California, Santa Barbara
1988-present Research Associate, Kellogg Biological Station, Michigan State University
1988-1992 Lecturer, Department of Biological Sciences, University of California, Santa Barbara
1988-1991 Post-graduate Research Biologist, Marine Science Institute, University of California, Santa Barbara
- Distinctions:** 1985-1986 MSU College of Natural Sciences Fellowship
1982-1985 National Science Foundation Predoctoral Fellowship

Research Interests:

Size and stage-structured interactions, and their implications for population dynamics and community patterns. The roles of predation and food limitation in aquatic ecosystems. Quantification of effect size (and interaction strength) and its variation among organisms and environments. The design and implementation of whole ecosystem experiments and environmental assessment studies.

Selected Publications:

- Wilson, W.G. C.W. Osenberg, R.J. Schmitt and R. Nisbet. 1999. Complementary foraging behavior allows coexistence of two grazers. *Ecology* **80**:2358-2372.
- Schmitt, R.J., S.J. Holbrook, and C.W. Osenberg. 1999. Quantifying the effects of multiple processes on local abundance: a cohort approach for open populations. *Ecology Letters* **2**:294-303.
- Osenberg, C.W., O. Sarnelle, D.E. Goldberg. 1999. Meta-analysis in ecology: concepts, statistics, and applications. *Ecology* **80**:1103-1104.
- Downing, J., C.W. Osenberg, and O. Sarnelle. 1999. Meta-analysis of marine nutrient-enrichment experiments: variation in the magnitude of nutrient limitation. *Ecology* **80**:1157-1167.
- Osenberg, C.W., O. Sarnelle, S.D. Cooper, and R.D. Holt. 1999. Resolving ecological questions through meta-analysis: goals, metrics and models. *Ecology* **80**:1105-1117.
- Osenberg, C.W., O. Sarnelle, and S.D. Cooper. 1997. Effect size in ecological experiments: in the application of biological models in meta-analysis. *American Naturalist* **15**:798-812.
- Steichen, D.J., Jr., S.J. Holbrook and C.W. Osenberg. 1996. The response of benthic and demersal macrofauna to organic enrichment at a natural oil seep. *Marine Ecology Progress Series* **138**:71-82.
- Schmitt, R.J. and C.W. Osenberg (editors and contributing authors). 1996. *Detecting Ecological Impacts: Concepts and Applications in Coastal Marine Habitats*. Academic Press, San Diego, CA. 401p.

HENRY M. PAGE

Marine Science Institute, University of California, Santa Barbara, CA

Project: *Effect of Offshore Oil Platform Structures on the Distribution Pattern of Commercially Important Benthic Crustaceans, with Emphasis on the Rock Crab*, CMI, 1995-97
Early Development of Fouling Communities on Offshore Oil Platforms, SCEI, 1999-2000

Education: B.S. University of Southern California 1973
M.A. University of California, Santa Barbara 1977
Ph.D. University of California, Santa Barbara 1984

Positions: 1985-present Assistant Research Biologist, Marine Science Institute, University of California, Santa Barbara
1984-1995 Visiting Lecturer, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara
1994-present Instructor, Department of Biological Sciences, Santa Barbara City College
1988-90 Instructor, Department of Biological Sciences, Santa Barbara City College
1983-85 Postgraduate Research Biologist, Marine Science Institute, University of California, Santa Barbara

Selected Publications:

- Galindo-Bect, M.S., S. Alvarez-Borrego, J.M. Hernandez-Ayon, H. Bustos-Serrano, H.M. Page and R.L. Petty. Benthic flux of inorganic nutrients in a small California salt marsh. *Wetlands*.
- Galindo-Bect, M. S., E. P. Glenn, H. M. Page, L. A. Galindo-Bect, J. M. Hernandez-Ayon, R. L. Petty, and J. Garcia-Hernandez. Analysis of peneid shrimp landings in the northern Gulf of California in relation to Colorado River discharge. *Fishery Bulletin*.
- Page, H.M., J. E. Dugan, D. Dugan, and J. Richards. 1999. Effects of an offshore oil platform on the distribution and abundance of commercially important crab species. *Marine Ecology Progress Series* **185**:47-57.
- Page, H.M. 1997. Importance of vascular plant and algal production to macroinvertebrate consumers in a southern California salt marsh. *Estuarine, Coastal and Shelf Science* **45**:823-834.
- Dugan, J.E., D.M. Hubbard and H.M. Page. 1995. Scaling population density to body size: tests in two soft sediment intertidal communities. *J. Coastal Res.* **11**:849-857.
- Page, H.M. 1995. Variation in the natural abundance of ¹⁵N in the halophyte, *Salicornia virginica*, associated with ground water subsidies of nitrogen in a southern California salt marsh. *Oecologia* **104**:181-188.
- Page, H.M., R.L. Petty and D.E. Meade. 1995. Influence of watershed run-off on nutrient dynamics in a southern California salt marsh. *Estuarine, Coastal and Shelf Science* **41**:163-180.
- Page, H.M., J.E. Dugan and D.M. Hubbard. 1992. Comparative effects of infaunal bivalves on an epibenthic microalgal community. *J. Exp. Mar. Biol. Ecol.* **157**:247-262.
- Page, H.M., A Fiala-Medioni, C.R. Fisher and J.J. Childress. 1991. Experimental evidence for filter-feeding by the hydrothermal vent mussel, *Bathymodiolus thermophilus*. *Deep-Sea Research* **38**:1455-1461.
- Page, H.M. and Y.O. Richard. 1990. Food availability as a limiting factor to mussel, *Mytilus edulis* growth in California coastal waters. *Fish. Bull. U.S.* **88**:677-686.
- Page, H.M., C.R. Fisher and J.J. Childress. 1990. The role of filter-feeding in the nutritional biology of a deep sea mussel with methanotrophic symbionts. *Mar. Biol.* **104**:251-257.
- Page, H.M. and D. M. Hubbard. 1987. Temporal and spatial patterns of growth in mussels, *Mytilus edulis* on an offshore platform: relationships to water temperature and food availability. *J. Exp. Mar. Biol. Ecol.* **111**:159-179.
- Page, H.M. 1986. Differences in population structure and growth rate of the stalked barnacle, *Pollicipes polymerus*, between a rocky headland and on offshore oil platform. *Mar. Ecol. Prog. Ser.* **29**:157-164.

CAROLYN POMEROY

Institute of Marine Science, University of California, Santa Cruz, CA

Project: *The Political Economy of the Rigs-to-Reef Option for Decommissioning of Offshore Oil and Gas Structures*, SCEI, 1999-2000

Education: B.A. Yale University, Southeast Asian Studies 1985
M.A. University of Miami, Rosenstiel School of Marine and Atmospheric Science Marine Affairs 1989
Ph.D. Texas A&M University, Wildlife & Fisheries Sciences 1993

Positions: 1995-present Assistant Research Scientist, Institute of Marine Sciences, UCSC
1998-present Lecturer, Ocean Sciences Board, UCSC
1995-96 Lecturer, California State University, Monterey Bay
1993-95 Visiting Scientist, Workshop in Political Theory & Policy Analysis, Indiana University
1994 Lecturer, School of Public and Environmental Affairs, Indiana University

Research experience and interests:

- Social identity and cooperation in the commons (Lake Chapala, Mexico; Skagit System Cooperative, Washington)
- Marine resource conflicts and conflict resolution (Lake Chapala, Mexico; Quintana Roo, Mexico; Santa Barbara Channel, CA; Skagit System Cooperative, Washington; Southeast Asian artisanal fisheries)
- Social and economic organization of fisheries; social and economic impact assessment, for fishery management, mitigation of fish contamination, and offshore oil platform decommissioning (California market squid; Mare Island Naval Shipyard and Vallejo, CA; Santa Barbara Channel, CA)
- Management of coastal and marine protected areas (Miami, FL; Half Moon Caye, Belize; Big Creek, CA, coastal CA)

Honors and awards:

1997 Most Innovative Poster, Sanctuary Currents '97, Santa Cruz, CA
1994 Grant-in-Aid, Research and the University Graduate School, Indiana University
1993 Travel Research Grant, Workshop in Political Theory & Policy Analysis, Indiana University
Graduate Program, Texas A&M University, Enhancement Fund Grant
1992 Exploration Fund Grant-in-Aid, Explorers Club
F.T. Griswold Scholarship, Pan American Round Tables of Texas
1991 SEASPACE Scholarship, Houston Underwater Club, Grant-in-Aid of Research, Sigma Xi
1990-91 Gamma Sigma Delta, Agriculture Honor Society,
1989 International Enhancement Grant, Texas A&M University, Regent's Fellowship, Texas A&M University
1987 Rosenstiel Fellowship, University of Miami

Selected Publications:

- Pomeroy, C. Social considerations for marine resource management: Evidence from Big Creek Ecological Reserve. *California Cooperative Oceanic Fisheries Investigations Reports* 40.
- Pomeroy, C. and J. Beck. in press. An experiment in fisheries co-management: Preliminary evidence from Big Creek. *Society and Natural Resources*.
- Pomeroy, C. and M. FitzSimmons. 1998. Information needs for effective management of the California market squid fishery: The role of social science research. *California Cooperative Oceanic Fisheries Investigations Reports* 39:108-114.
- Bailey, C., and C. Pomeroy. 1996. Resource dependency and community stability in coastal fishing communities of Southeast Asia. *Society and Natural Resources* 9:191-199.
- Pomeroy, C. 1995. Review of *Ecological Identity* by Mitchell Thomashow. *Journal of Political Ecology* 2:47-51.

PETER T. RAIMONDI

Department of Biology, University of California, Santa Cruz, CA

- Projects:** *The Effects of Produced Water on the Settlement of Some Marine Invertebrates*, SCEI, 1992-1994
Environmental Effects of Produced Water: A BACIP Field Assessment, SCEI, 1994-95
Inventory of Rocky Intertidal Resources in San Luis Obispo, Santa Barbara and Orange Counties, CMI, 1995-97
Interagency Rocky Intertidal Monitoring Network Workshop, SCEI, 1996-97
Effects of Produced Water on Complex Behavior Traits of Invertebrate Larvae and Algal Zoospores, CMI, 1997-98
Effects of an Oil Spill on Multispecies Interactions that Structure Intertidal Communities, SCEI, 1997-2000
Inventory of Rocky Intertidal Resources in San Luis Obispo and Northern Santa Barbara Counties, SCEI, 1997-2000
Effects of Temporal and Spatial Separation of Samples on Estimation of Impacts, CMI, 1998-2000
- Education:** B.A. Philosophy, Northern Arizona University 1976
Ph.D. Biology, University of California, Santa Barbara 1988
- Positions:** 1996-present Assistant Professor, Department of Biology, University of California, Santa Cruz
1992-1996 Assistant Research Biologist, Marine Science Institute, University of California, Santa Barbara
1991-1992 Post-doctoral Research Biologist, Marine Science Institute, University of California, Santa Barbara
1989-1991 Research Fellow, Australian Research Council Fellowship, University of Melbourne, Department of Zoology
1988-1989 Research Fellow, University of Melbourne Research Fellowship
1987-1988 Post-doctoral Researcher, University of California, Santa Barbara
1986-1990 Environmental Consultant, Marine Review Committee

Selected Publications:

- Reed DC, MH Carr, L Goldwasser and PT Raimondi. Role of dispersal potential in determining the spatial structure of an assemblage of sedentary marine organisms. *Ecology*. In press.
- Raimondi PT and S Forde. Processes structuring communities: evidence for trait mediated interactions through induced polymorphisms. *Ecology*. In press.
- Carr MH, and PT Raimondi. 1999. Marine protected areas as a precautionary approach to management. CALCOFI reports.
- Carr MH and PT Raimondi. Concepts relevant to the design and evaluation of harvest reserves. Proceedings of workshop on rockfish refugia.
- Raimondi PT and ANC Morse. Complex larval behavior and the vertical distribution and orientation of *Agaricia humilis* (Scleractinia). *Ecology*.
- Raimondi, P.T., A.M. Barnett, and P.R. Krause. 1997. The effects of drilling muds on marine invertebrate larvae and adults. *Environmental Toxicology and Chemistry* **16**:1218-1228.
- Allstatt, J.A., R.F. Ambrose, J.M. Engle, P.L. Haaker, K.D. Lafferty and P.T. Raimondi. 1996. Recent declines of black abalone *Haliotis cracherodii* on the mainland coast of central California. *Marine Ecology Progress Series* **142**:185-192.
- Keough, M.J. and P.T. Raimondi. 1996. Responses of settling invertebrate larvae to bioorganic films: Effects of large-scale variation in films. *J. Exp. Mar. Biol. Ecology* **207**:59-78.
- Raimondi, P.T. and D. Reed. 1996. Determining the spatial extent of ecological impacts caused by local anthropogenic disturbances in coastal marine habitats. In: *Detecting Ecological Impacts: Concepts and Applications in Coastal Habitats*, R.J. Schmitt and C.W. Osenberg, eds. Academic Press, San Diego, CA, pp. 179-198.
- Keough, M.J. and P.T. Raimondi. 1995. Responses of settling invertebrate larvae to microbial films, II: Effects of different types of films. *Marine Ecology Progress Series* **185**:235-253.

DANIEL C. REED

Marine Science Institute, University of California, Santa Barbara, CA

- Projects:** *Potential Biogenic Habitat Alteration by OCS Activities: Adverse Effects to Early Life-History Stages of Giant Kelp from Chronic Disturbance*, SCEI, 1991-93
Development of Methods for Surfgrass (Phyllospadix spp.) Restoration Using Early Life History Stages, CMI, 1995-98
Application of Genetic Techniques for use in Restoration of Surfgrass (Phyllospadix torreyi), SCEI, 1999-2000
- Education:** B.A. Moss Landing Marine Laboratories and San Francisco State University 1978
M.A. Moss Landing Marine Laboratories and San Francisco State University 1981
Ph.D. University of California, Santa Barbara 1989
- Positions:** 1989-present Assistant Research Biologist, Marine Science Institute, University of California, Santa Barbara
1990 Biological Consultant, Woodward-Clyde Consultants
1987-90 Biological Consultant, Marine Review Committee
1988-89 Biological Consultant, Michael Brandman Associates
1986-87 Biological Consultant, Chambers Consultants
- Distinctions:** 1989 Lancaster Award for Outstanding Dissertation, University of California, Santa Barbara
1984 Antarctic Service Medal of the United States of America, National Science Foundation

Selected Publications:

- Blanchette, C.A., Worcester, S., Reed, D. and S.J. Holbrook. 1999. Algal morphology, flow and spatially variable recruitment of surfgrass, *Phyllospadix torreyi*. *Marine Ecology Progress Series* **184**:119-128.
- Reed, D.C., M.A. Brzezinski, D.A. Coury, W.M. Graham, and R.L. Petty. 1999. Neutral lipids in macroalgal spores and their role in swimming. *Marine Biology* **133**:737-744
- Reed, D.C., S.J. Holbrook, E. Solomon, and M. Anghera. 1998. Studies on germination and root development in the surfgrass *Phyllospadix torreyi*: Implications for habitat restoration. *Aquatic Botany* **62**:71-80.
- Reed, D.C., T.W. Anderson, A.W. Ebeling, and M. Anghera. 1997. Role of reproductive synchrony in the colonization potential of kelp. *Ecology* **78**:2443-2457.
- Reed, D.C., A.W. Ebeling, T.W. Anderson and M. Anghera. 1996. Differential reproductive responses to fluctuating resources in two seaweeds with different reproductive strategies. *Ecology* **77**:300-316.
- Raimondi, P.T. and D. Reed. 1996. Determining the spatial extent of ecological impacts caused by local anthropogenic disturbances in coastal marine habitats. In: *Detecting Ecological Impacts: Conceptual Issues and Applications in Coastal Marine Habitat*, R.J. Schmitt and C.W. Osenberg, eds. Academic Press, San Diego, CA, pp. 179-198.
- Canestro, D. P.T. Raimondi, D.C. Reed, R.J. Schmitt, and S.J. Holbrook. 1996. A study of methods and techniques for detecting ecological impacts. Pp. 53-67 in: *Methods and techniques of underwater research, Proceedings of the American Academy of Underwater Scientists symposium*. AAUS, Nahant, MA.
- Ambrose, R.F., J. Boland, W.W. Murdoch, P.T. Raimondi and D.C. Reed. 1995. The San Onofre nuclear generating station mitigation reef: monitoring issues. In: *Proceedings from the International Conference on Ecological System Enhancement Technology for Aquatic Environments*. Japan International Marine Science and Technology Federation, Tokyo, pp. 587-592.
- Reed, D.C., R.J. Lewis and M. Anghera. 1994. Effects of an open coast oil production outfall on patterns of giant kelp (*Macrocystis pyrifera*) recruitment. *Marine Biology* **120**:26-31.
- Reed, D.C. 1994. Giant forests of the sea. *The World and I* **July**:202-207.
- Reed, D.C. and R.J. Lewis. 1994. Effects of an oil and gas production effluent on the colonization potential of giant kelp (*Macrocystis pyrifera*) zoospores. *Marine Biology* **119**:277-283.

RUSSELL J. SCHMITT

Department of Ecology, Evolution and Marine Biology and Coastal Research Center, Marine Science Institute,
University of California, Santa Barbara, CA

- Projects:** *Ecological Effects of Chronic Exposure to Produced Water: A Field Test*, SCEI, 1989-94
Effects of Produced Water on Demographic Rates: Integration of Individual Responses with Population Consequences, SCEI, 1989-92
Development of an SCEI Social and Economic Research Agenda, SCEI, 1994-95
Environmental Recovery Following Cessation of a Produced Water Discharge, SCEI, 1994-96
Population Trends and Trophic Dynamics in Pacific OCS Ecosystems: What Can Monitoring Data Tell Us?, CMI, 1997-2002
- Education:** B.A. Environmental Biology, University of Colorado 1972
M.S. Marine Science, University of the Pacific 1975
Ph.D. Biology, University of California, Los Angeles 1979
- Positions:** 1995-present Professor, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara
1994-present Program Director, Coastal Marine Institute, University of California, Santa Barbara
1991-present Program Director, Coastal Toxicology Program, UC Toxic Substances Research and Teaching Program
1989-present Program Director, Southern California Educational Initiative, University of California, Santa Barbara
1987-present Director, Coastal Research Center, Marine Science Institute, University of California, Santa Barbara
1993-1995 Associate Professor, Department of Biology and Environmental Studies Program, University of California, Santa Barbara
1987-1992 Associate Research Biologist, Marine Science Institute, University of California, Santa Barbara
1987-1992 Associate Research Biologist, Marine Science Institute, University of California, Santa Barbara
1981-1987 Assistant Research Biologist, Marine Science Institute, University of California, Santa Barbara
- Distinctions:** 1989 George Mercer Award for 1989, Ecological Society of America (best published research in field of Ecology by a scientist under age 40; Awarded for "Indirect interactions between prey: apparent competition, predator aggregation and habitat selection," *Ecology* **68**:1887-1897)

Selected Publications:

- Holbrook, S.J., Forrester, G.E. and R.J. Schmitt. 1999. Spatial patterns in abundance of a damselfish reflect availability of suitable habitat. *Oecologia*, In press.
- Schmitt, R.J., S.J. Holbrook and C.W. Osenberg. 1999. Quantifying the effects of multiple processes on local abundance: A cohort approach for open populations. *Ecology Letters* **2**:294-303.
- Schmitt, R.J. and S.J. Holbrook. 1999. Settlement and recruitment of three damselfish species: larval delivery and competition for shelter space. *Oecologia* **118**:76-86.
- Schmitt, R.J. and S.J. Holbrook. 1999. Mortality of juvenile damselfish: implications for assessing processes that determine abundance. *Ecology* **80**:35-50.
- Holbrook, S.J. and R.J. Schmitt. 1998. Have field experiments aided in the understanding of abundance and dynamics of reef fishes? Pp. 152-169 in: *Issues and Perspectives in Experimental Ecology*, W.J. Resetarits and J. Bernado eds. Oxford University Press.
- Holbrook, S.J., R.J. Schmitt, and J.A. Stephens Jr. 1997. Changes in an assemblage of temperate reef fishes associated with a climate shift. *Ecological Applications* **7**:1299-1310.

STEPHEN SCHROETER

Marine Science Institute, University of California, Santa Barbara, CA

Project: *Adding Biology to BACI: Exploring the use of functional groups, trophic relationships, biological indices, and multiple ecologically similar comparison sites in choosing models and estimating effects in impact analysis, SCEI, 1998-99*

Education: B.S. Zoology, Brigham Young University 1969
M.S. Zoology, Brigham Young University 1972
Ph.D. Ecology, University of California, Santa Barbara 1978

Positions: 1987-present Ecologist and Partner, Ecometrics
1995-present Lecturer, University of California, San Diego Extension Program
1996-present Associate Research Biologist, Marine Science Institute, University of California, Santa Barbara
1989-present Adjunct Professor, Department of Biology, San Diego State University
1983-88 Research Assistant Professor and Principal Investigator, Department of Biological Sciences, University of Southern California, Los Angeles, CA
1978-83 Allan Hancock Fellow and Research Associate, Department of Biological Sciences, University of Southern California, Los Angeles, CA

Awards: 1988 Outstanding publication in the Marine Fisheries Review for 1985, with Susumu Kato
1985-87 Faculty Research Incentive Grants, University of Southern California
1982-88 Contracts with the Marine Review Committee, Inc. for studies of benthic and epiphytic invertebrates in kelp beds near the San Onofre Nuclear Generating Stating.
1977-82 Contracts with the Marine Review Committee, Inc. for studies of benthic and epiphytic invertebrates in kelp beds near the San Onofre Nuclear Generating Station.
1976-77 Ford Foundation Fellowship
1975-76 Sea Grant Traineeship, University of California
1975 University Fellowship, University of California
1971 NSF Graduate Traineeship, Brigham Young University
1971 University Fellowship, Brigham Young University

Selected Publications:

- Bence, J.R., A. Stewart-Oaten, and S.C. Schroeter. 1996. Estimating the size of an effect from a Before-After-Control Impact-Pairs design: the predictive approach applied to a power plant study. Pp. 133-149 in: *Ecological Impacts Assessment: Conceptual Issues and Application in Coastal Marine Habitats*, R.J. Schmitt and C.W. Osenberg, eds. University of California Press, Berkeley, CA
- Ebert, T.A., S.C. Schroeter, and J.D. Dixon. 1993. Inferring demographic processes from size-frequency distribution. Effect of pulsed recruitment on simple models. *Fishery Bulletin* **91**:237-243.
- Ebert, T.A., S.C. Schroeter, J.D. Dixon, and P. Kalvass. 1994. Settlement patterns of red and purple sea urchins (*Strongylocentrotus franciscanus* and *S. purpuratus*) in California. *Marine Ecology Progress Series* **111**:41-52.
- Lissner, A.L., G.L. Taghon, R.R. Diener, S.C. Schroeter, and J.D. Dixon. 1991. Review of recolonization and recovery of deep-water hard substrate communities. *Ecological Applications* **1**:258-267.
- Kato, S. and S.C. Schroeter. 1985. Biology of the red sea urchin, (*Strongylocentrotus franciscanus*) and its fishery in California. *Marine Fisheries Review* **47**:1-20.
- Dean, T.A., S.C. Schroeter, and J.D. Dixon. 1984. Effects of grazing by two species of sea urchins (*Strongylocentrotus franciscanus* and *Lytechinus anamesus*) on recruitment and survival of two species of kelp (*Macrosystis pyrifera* and *Pterygophora californica*). *Marine Biology* **78**:301-313.
- Bernstein, B.B., S.C. Schroeter, and K.H. Mann. 1983. Sea urchin (*Strongylocentrotus droebachiensis*) aggregating behavior investigated by a subtidal multifactorial experiment. *Canadian Journal of Fisheries and Aquatic Sciences* **40**:1975-1986.

RACHEL A. SCHURMAN

Energy and Resources Group, University of California, Berkeley, CA

- Project:** *Public Policy, Oil Production, and Energy Consumption in Twentieth-Century California*, SCEI, 1996-98
- Education:**
- | | | |
|-------|--|------|
| B.A. | Economics, University of Massachusetts | 1979 |
| M.A. | Economics, Tufts University | 1983 |
| Ph.D. | Sociology, University of Wisconsin | 1993 |
- Position:**
- | | |
|--------------|--|
| 1993-present | Assistant Professor, Energy and Resources Group, and Department of Sociology, University of California, Berkeley |
| 1990-91 | Visiting Research Scholar, Institute of Economics, Austral University of Chile, Valdivia, Chile |
| 1985-86 | Research Analyst, Institute for Food and Development Policy, San Francisco, California |
| 1980-84 | Research Analyst, Center for Health Economics Research, Inc., Chestnut Hill, Massachusetts. |

Research Interests:

Schurman spent five years working as a health economist at the Center for Health Economics Research in Boston, Massachusetts, where she published a number of articles in the health field. In 1984, she started a new career working on international development issues, and co-authored two books while at the Institute of Food and Development Policy, a San Francisco based "think tank" dedicated to food and hunger issues. Schurman's work is on natural resources and economic development particularly in Latin America.

Her interests include the political economy of natural resource industries; international fisheries issues; and environment and development in Chile. Schurman's newest project involves analyzing Japanese and Spanish strategies for gaining access to the fisheries resources of developing countries. In 1993, Schurman received the Ciriacy-Wantrup Post-Doctoral Fellowship in Natural Resource Economics at the University of California at Berkeley.

Selected Publications:

- Schurman, R.A. 1997. The future of regional cooperation in a changing economic environment: the South Pacific Island countries in the 1990s. *Ocean Development and International Law* **28**:369-403.
- Schurman, R.A. 1997. Tuna dreams: Resource nationalism and the Pacific Islands tuna industry. *Development and Change* **29**:107-136.
- Schurman, R.A. 1996. Chile's new entrepreneurs and the "Economic Miracle": the invisible hand or a hand from the State? *Studies in Comparative International Development* **31**:83-109.
- Schurman, R.A. 1996. Snails, southern hake and sustainability - neoliberalism and natural resource exports in Chile. *World Development* **24**:1695-1709.
- Barham, B., M. Clark, E. Katz and R.A. Schurman. 1992. Non traditional exports in Latin America: Towards an appraisal. *Latin American Research Review* **S92**:43-82.
- Schurman, R.A. and B. Sheehan. 1992. Chiloé: An island wrestles with free market forces. North American Congress on Latin America. *Report on the Americas*.

Book Reviews:

- Overfishing: Causes and consequences: A review of the ecologist's special issue. Capitalism, Nature, Socialism* No. 25 (Spring 1996).
- The bay shrimpers of Texas: Rural fishermen in a global economy*, by R.L. Maril. *Contemporary Sociology - A Journal of Reviews* **25**:644-645.

ERIC R.A.N. SMITH

Political Science Department, University of California, Santa Barbara, CA

- Projects:** *Trends in Public Opinion on Offshore Oil Development in California*, SCEI, 1992-93
Trends in Public Opinion on Offshore Oil Development: Fine Scale Resolution / Public Perceptions of Risk in Energy Development, SCEI, 1994-96
A Design for a Time Series Study of a NIMBY Response, SCEI, 1999-2000
- Education:** A.B. University of California, Berkeley 1975
M.A. University of California, Berkeley 1976
Ph.D. University of California, Berkeley 1982
- Positions:** 1990-present Associate Professor, Department of Political Science, University of California, Santa Barbara
1986-90 Assistant Professor, Department of Political Science, University of California, Santa Barbara
1982-86 Assistant Professor, Department of Political Science, Columbia University
1982 Lecturer in Politics, Brandeis University
- Distinctions:** 1988-89 University of California Regents' Junior Faculty Fellowship
1979 First Prize, American Association for Public Opinion research, Student Paper Contest for "The False Measures of the Levels of Conceptualization"

Selected Publications:

- Smith, E.R.A.N. How Political Activists See Offshore Oil Development: An In-depth Investigation of Attitudes on Energy Development. Final Study Report to the Minerals Management Service, U.S. Department of the Interior, July, 1998.
- Smith, E.R.A.N. What is public opinion? *Critical Review*.
- Smith, E.R.A.N. and S. Garcia. Californians' attitudes toward energy policy.
- Smith, E.R.A.N. and S. Woodlief. Problems with the single peaked preference assumption in the spatial theory of elections.
- Fox, R.L.; and E.R.A.N. Smith. 1998. The role of candidate sex in voter decision-making. *Political Psychology* **19**:405-419.
- Smith, ERAN. 1997. Book Review: *What Americans know about politics and why it matters*, by M.X.D. Carpini, S. Keeter. *Political Science Quarterly* **112**:314-315.
- Smith, E.R.A.N. 1996. Book Review: *The two majorities - the issue context of modern American politics*, B.E. Shafer and W.J.M. Claggett. *American Political Science Review* **90**:438-439.
- Smith, E.R.A.N. 1996. Book Review: *The changing American mind - how and why American public opinion changed between 1960 and 1988*, W.G. Mayer. *Critical Review* **10**:95-105.
- Smith, E.R.A.N. 1996. Book Review: *The rational public - fifty years of trends in American policy preferences*, B. Page and R. Shapiro. *Critical Review* **10**:95-105.
- Smith, E.R.A.N. 1996. Book Review: *Public opinion in America - moods, cycles and swings*, J.A. Stimson. *Critical Review* **10**:95-105.
- Squire P. and E.R.A.N. Smith 1996. A further examination of challenger quality in Senate elections. *Legislative Studies Quarterly*. **421**:235-248.
- Herrera, R., T. Epperlein and E.R.A.N. Smith. 1995. The stability of congressional roll-call indexes. *Political Research Quarterly* **48**:403-416.
- Smith, E.R.A.N., and S.R. Garcia. 1995. Evolving California opinion on offshore oil development. *Ocean and Coastal Management* **26**:41-56.
- Squire, P., E.R.A.N. Smith, J. Lindsay and C. Covington. 1995. *Dynamics of Democracy*. Brown-Benchmark, Madison, Wisconsin. 596p.

CHRISTOPHER C. SORLIEN

Institute for Crustal Studies, University of California, Santa Barbara, CA

Project: *Structural Evolution of the Hosgri-Purisima-Lompoc Fault System, Santa Maria Basin, California, from 3-D Map Restoration: Economic and Earthquake Hazard Implications*, SCEI, 1995-97

Education	B.A.	Geology, University of Rhode Island	1981
	D.E.A.	Structural Geology, Université Pierre et Marie Curie, Paris VI, France	1985
	M.S.	Geophysical Sciences, Georgia Institute of Technology	1988
	Ph.D.	Geology, University of California, Santa Barbara	1994

Positions:	1992-present	Assistant Research Geologist, Institute for Crustal Studies, University of California, Santa Barbara
	1988-1992	Graduate Research Assistant, University of California, Santa Barbara
	1989 (summer)	Geophysicist, Mobil Oil Corporation, Bakersfield
	1982-1984	Geophysicist, Gulf Oil Company, New Orleans

Selected Publications:

Sorlien, C. C., M.J. Kamerling, and D. Mayerson. 1999. Block rotation and termination of the Hosgri strike-slip fault, California, from three-dimensional map restoration. *Geology* **27**(11)

Legg, M., C. Nicholson, and C. Sorlien. Crustal imaging and extreme Miocene extension of the inner California Continental Borderland. *Geological Society of America Bulletin*.

Seeber, L. and C. Sorlien. Listric thrusts in the western Transverse Ranges, California. *Geological Society of America Bulletin*.

Sorlien, C., J.P. Gratier, B.B. Luyendyk, J.S. Hornafius, and T.E. Hops. Three-dimensional restoration of a folded and faulted layer across the Oak Ridge fault, onshore and offshore Ventura basin, California. *Tectonics*.

Sorlien, C.C., J.P. Gratier, B.P. Luyendyk, J.S. Hornafius, and T.E. Hops. Finite displacement field across the Oak Ridge fault: Restoration of a folded and faulted layer near onshore and offshore Ventura basin, California. *Geology*.

Sorlien, C.C., C. Nicholson, B.P. Luyendyk, and M.E. Tennyson. Fault block model for Miocene extension and rapid initial rotation of south-central California. *Extensional Tectonism in Coastal Southern California, Geological Society of America Special Paper Series*.

Nicholson, C., C.C. Sorlien, T. Atwater, J.C. Crowell, B.P. Luyendyk. 1994. Microplate capture, rotation of the Western Transverse Ranges, and initiation of the San Andreas transform as a low-angle fault system. *Geology* **22**:491-495.

Sorlien, C.C. 1994. Faulting and uplift of the northern Channel Islands, California. In: *The Fourth Channel Islands Symposium: Update on the Status of Resources*, W.L. Halvorson, G.J. Maender, eds. Santa Barbara Museum of Natural History, Santa Barbara, CA, pp 281-296.

Chorowicz, J., and C. Sorlien. 1992. Oblique extensional tectonics in the Malawi Rift, Africa. *Geological Society of America Bulletin* **104**:1015-1023.

Nicholson, C., C.C. Sorlien, and B.P. Luyendyk. 1992. Deep crustal structure and tectonics in the offshore Southern Santa Maria Basin, California. *Geology* **20**:239-242.

Pinter, N., and C. Sorlien. 1991. Evidence for latest Pleistocene to Holocene movement on the Santa Cruz Island fault, California. *Geology* **19**:909-912.

ALLAN STEWART-OATEN

Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara, CA

Projects: *Environmental Assessment: Statistical Description of Variable Effects on Fluctuating Populations*, SCEI, 1991-93
Environmental Assessment: Statistical Description of Variable Effects, SCEI, 1994-98

Education: B.A. (Hons.: English & Pure Mathematics) 1961
Dip. Ed., University of Melbourne, Australia 1962
M.S. Mathematical Statistics, Michigan State University 1967
Ph.D. Mathematical Statistics, Michigan State University 1969

Positions: 1976-present Associate Professor of Mathematical Biology, Department of Biological Sciences, University of California, Santa Barbara
1975-present Statistical Consultant to the Marine Review Committee
1978-1979 Visiting Associate Professor of Zoology, University of Hawaii
1970-1976 Assistant Professor of Mathematical Biology, Department of Biological Sciences, University of California, Santa Barbara
1969-1970 Acting Assistant Professor of Statistics, Stanford University

Selected Publications:

- Goldberg, DE; Rajaniemi, T; Gurevitch, J; Stewart-Oaten, A. 1999. Empirical approaches to quantifying interaction intensity: Competition and facilitation along productivity gradients. *Ecology* **80**:1118-1131.
- Bence, J.R., A. Stewart-Oaten and S.C. Schroeter. 1996. Estimating the size of an effect from a Before-After-Control-Impact-Paired Series design: the predictive approach applied to a power plant study. In: *Detection of Ecological Impacts: Conceptual Issues and Application in Coastal Marine Habitats*, R.J. Schmitt, and C.W. Osenberg, eds. Academic Press, San Diego, CA, pp. 133-149.
- Nisbet, R.M., W.W. Murdoch and A. Stewart-Oaten. 1996. Consequences for adult-fish stocks of human-induced mortality of immatures. In: *Detection of Ecological Impacts: Conceptual Issues and Application in Coastal Marine Habitats*, R.J. Schmitt, and C.W. Osenberg, eds. Academic Press, San Diego, CA, pp. 257-277.
- Stewart-Oaten, A. 1996. Goals in environmental monitoring. In: *Detection of Ecological Impacts: Conceptual Issues and Application in Coastal Marine Habitats*, R.J. Schmitt, and C.W. Osenberg, eds. Academic Press, San Diego, CA, pp. 17-27.
- Stewart-Oaten, A. 1996. Problems in the analysis of environmental monitoring data. In: *Detection of Ecological Impacts: Conceptual Issues and Application in Coastal Marine Habitats*, R.J. Schmitt, and C.W. Osenberg, eds. Academic Press, San Diego, CA, pp. 109-131.
- Stewart-Oaten, A. 1995. Rules and judgments in statistics - three examples. *Ecology* **76**:2001-2009.
- Stewart-Oaten, A., W.W. Murdoch, S.J. Walde. 1995. Estimation of temporal variability in populations. *American Naturalist* **146**:519-535.
- Stewart-Oaten, A. 1996. Sequential estimation of log (abundance). *Biometrics* **52**:38-49.
- Nisbet, R.M., C.J. Briggs, W.S.C. Gurney, W.W. Murdoch and A. Stewart-Oaten. 1994. Two patch metapopulation dynamics. In: *Patch Dynamics in Terrestrial, Freshwater and Marine Ecosystems*. S.L. Levin, T. Powell and J. Steele, eds. Springer-Verlag Notes in Biomathematics. Springer-Verlag, New York.
- Stewart-Oaten, A. 1993. Evidence and statistical summaries in environmental assessment. *Trends in Ecology and Evolution* **8**:156-158.
- Stewart-Oaten, A., J.R. Bence and C.W. Osenberg. 1992. Assessing effects of unreplicated perturbations: no simple solutions. *Ecology* **73**:1396-1404.

LIBE WASHBURN

Department of Geography, University of California, Santa Barbara, CA

Projects: *Spatial Scale of Produced Water Impacts as Indicated by Plume Dynamics and Biological Field Assays*, SCEI, 1992-94
Application of Coastal Ocean Dynamics Radars for Observation of Near-Surface Currents off the South-Central, CMI, 1996-99

Education: B.S. University of Arizona 1974
M.S. University of California, San Diego 1978
Ph.D. University of California, San Diego 1982

Positions: 1993-present Associate Professor, Department of Geography, University of California, Santa Barbara
1991-1993 Assistant Professor, Department of Geography, University of California, Santa Barbara
1985-1990 Research Assistant Professor of Physical Oceanography, Center for Earth Sciences, University of Southern California, Los Angeles, CA
1982-1985 Postgraduate Research Oceanographer, Scripps Institution of Oceanography

Selected Publications:

- Washburn, L., S. Stone, and S. MacIntyre. 1999. Dispersion of a produced water plume in a shallow coastal environment: implication for biological effects, accepted for publication. *J. Cont. Shelf. Res.* **19**:57-78.
- Washburn, L., B.M. Emery, B.H. Jones, and D.G. Ondercin. 1998. Eddy stirring and phytoplankton distributions in the Subarctic North Atlantic in Late Summer, *Deep-Sea Research Part I - Oceanographic Research Papers* **45**:1411-1439.
- Ohlmann, J.C., D.A. Siegel, and L. Washburn. 1998. Radiant heating of the western equatorial Pacific during TOGA-COARE, *J. Geophys. Res.* **103**:5379-5395.
- Pinkel, R., M. Merrifield, M. McPhaden, J. Picault, S. Rutledge, D. Siegel, and L. Washburn. 1997. Solitary waves in the western Equatorial Pacific Ocean. *Geophys. Res. Lett.*, **24**:1603-1606.
- Jones, B.H., L. Washburn, S. Bay, and K. Schiff. 1997. Stormwater runoff into Santa Monica Bay: Identification, impact, and dispersion, *Conf. Proc., California and the World Ocean '97*, 24-27 March 1997, San Diego, CA.
- Washburn, L., T. Duda and D. Jacobs. 1996. Interpreting conductivity microstructure: estimation of the temperature variance dissipation rate in the presence of salinity gradients. *J. Atmospheric and Oceanic Tech.* **13**:1166-1188.
- Siegel, D.A., J.C. Ohlmann, L. Washburn, R.R. Bidigare, C.T. Nosse and Y. Zhou. 1995. Solar radiation, phytoplankton pigments and the radiant heating of the equatorial Pacific Warm Pool. *J. Geophys. Res.* **100**:4885-4891.
- Wu, Y., L. Washburn and B.H. Jones. 1994. Buoyant plume dispersion in a coastal environment: Observations of plume structure and dynamics. *Journal of Continental Shelf Research* **14**,9:1001-1023.
- Jones, B.H., T.D. Dickey, L. Washburn and D. Manow. 1993. Physical and biological dynamics of sewage outfall plumes in the coastal region: an integrated observational approach. *Water Pollution II: Modeling, measuring and prediction*, L.C. Wrobel and C. A. Brebbia eds., Computational Mechanics Publications, Southampton, pp. 527-534.
- Washburn, L., M. Swenson, J.L. Largier, P.M. Kosro, and S.R. Ramp. 1993. Cross-shelf sediment transport by an anti-cyclonic eddy off Northern California. *Science* **261**:1560-1564.
- Washburn, L., B.H. Jones, A. Bratkovich, T.D. Dickey and M.S. Chen. 1992. Mixing, dispersion, and resuspension in the vicinity of an ocean wastewater plume. *J. Hydraulic Engr.* **118**: 38-58.
- Huyer, A., P.M. Kosro, J. Fleischbein, S.R. Ramp, T. Stanton, L. Washburn, F.P. Chavez, T.J. Cowles, S.D. Pierce and R.L. Smith. 1991. Currents and waste masses of the Coastal Transition Zone off Northern California, June to August 1988. *J. Geophys. Res.* **96**,C8:14809-14831.

JOHN T. WOOLLEY

Department of Political Science, University of California, Santa Barbara, CA

- Projects:** *Mitigating the Impact of Offshore Oil: Development Implementation Issues*, SCEI, 1989-94
An Evaluation of Current Programs to Identify and Mitigate Socioeconomic Impacts in the Santa Barbara Channel Region, SCEI, 1991-92
- Education:** B.A. Government, Oberlin College 1972
M.A. Political Science, University of Wisconsin, Madison 1974
Ph.D. Political Science, University of Wisconsin, Madison 1980
- Positions:** 1993-present Professor, University of California, Santa Barbara
1993-94 Visiting Professor, Georgetown University, School of Business
1992-93 Visiting Associate Professor, Georgetown University, School of Business
1988-93 Associate Professor, University of California, Santa Barbara
1991-92 Director, UCSB Washington Center, Washington, D.C.
1989-91 Director, Ocean & Coastal Policy Center, UC Santa Barbara
1986-88 Assistant Professor, University of California, Santa Barbara
1985-86 Sr. Associate, Center of the Study of Data Processing, Washington University in St. Louis
1978-86 Assistant Professor, Washington University in St. Louis
- Distinctions:** 1982-85 Volkswagen Foundation and Council for European Studies: Project Grant for Research on Political Economy of Monetary Policy in Western Europe (co-recipient)
1982 Social Science Research Council: SSRC/Fulbright Research Grant
1977-78 Brookings Institution: Research Fellowship
- Selected Publications:**
Molotch, H., J. Woolley, and T. Jori. 1998. Growing firms in declining fields: Unanticipated impacts of oil development. *Society & Natural Resources* **11**:137-156.
Woolley, J. The study of the politics on monetary policy: a critical review. *Journal of Public Policy*.
Woolley, J. 1994. Book Review: *Business and banking - political change and economic integration in western Europe* by P. Kurzer. *Comparative Political Studies* **27**:302-307.
Woolley, J. 1994. Book Review: *Monetary sovereignty - the politics of central banking in western Europe* by J.B. Goodman. *Comparative Political Studies* **27**:302-307.
Woolley, J. 1994. Linking political and monetary union: the Maastricht agenda and German domestic policies. In: *The Political Economy of European Monetary Unification* by J. Frieden and B. Eichengreen, eds. Westview Press, New York.
Woolley, J. 1993. Federal Reserve; Monetary Policy; and Quadriad. In: *Encyclopedia of the Presidency*. L.W. Levy and L. Fisher, eds. Simon and Schuster, New York.
Woolley, J. 1993. Conflict among regulators and the hypothesis of congressional dominance. *Journal of Politics* **55**:92-114.
Woolley, J. 1992. Policy credibility and European monetary institutions. In: *Europolitics: Institutions and Policymaking in the "New" European Community*, A. Sbragia, ed. Brookings, Washington, D.C, pp. 157-190.

SUSANNE E. WORCESTER

Department of Earth Systems Science and Policy, California State University, Monterey Bay, Seaside, CA

- Project:** *Development of Methods for Surfgrass (Phyllospadix spp.) Restoration Using Early Life History Stages*, CMI, 1995-98
- Education:** B.S. Biology, University of Utah 1987
Ph.D. Integrative Biology, University of California, Berkeley 1994
- Positions:** 1996-present Assistant Professor, Earth Systems Science and Policy, California State University Monterey Bay
1995-1996. Assistant Research Biologist, Marine Science Institute, University of California, Santa Barbara
1994-1995 Postdoctoral Research, Marine Science Institute, University of California, Santa Barbara
1987-1993 Research Assistant, University of California, Berkeley
1989 Independent Researcher, Friday Harbor Laboratories, WA
1986-87 Interpretive Leader, Tracy Aviary, Salt Lake City, Utah
1985-86 Teaching Assistant, University of Utah
1985 Research Assistant, Northern Arizona University
1984-85 Research Assistant, University of Utah
- Distinctions:** 1994 Outstanding Graduate Student Instructor Award, University of California, Berkeley
1993 Murry F. Buell Award for Best Student Paper, Honorable Mention, Ecological Society of America
1991 Achievement Rewards for College Scientists
1991-92 University Research Expeditions Program Grants
1990 Sigma Xi Grants-in-Aid of Research
1989 Lerner-Gray Marine Fund of the American Museum of Natural History, Grant in Support of Research
1989 University Fellowship-University of California, Berkeley
1983 Seville-Flowers Four Year Scholarship, University of Utah
- Selected Publications:**
Worcester, S.E. Physical and biological factors influencing the dispersal of larval and adult ascidians. *J. Exp. Mar. Biol. Ecol.*
Blanchette, CA; Worcester, SE; Reed, D; Holbrook, SJ. 1999. Algal morphology, flow, and spatially variable recruitment of surf grass *Phyllospadix torreyi*. *Marine Ecology-Progress Series*, **184**:119-128.
Worcester, SE, and SD Gaines. 1997. Quantifying hermit crab recruitment rates and megalopal shell selection on wave-swept shores. *Marine Ecology-Progress Series*, **157**:307-310.
Worcester, S.E. 1996. The scaling of size and stiffness of primary flight feathers. *J. Zoology London*. **239**:609-624.
Worcester, S.E. 1995. Effects of eelgrass beds on advection and turbulent mixing in low current and low shoot density environments. *Mar. Ecol. Prog. Ser.* **126**:223-232.
Worcester, S.E. 1994. Adult rafting vs. Larval swimming: dispersal and recruitment of a botryllid ascidian on eelgrass. *Mar. Biol.* **121**:309-317.
Worcester, S.E. 1993. Colonial ascidians rafting on eelgrass: do adults have greater success dispersing than larvae? *Bul. Ecol. Soc. Amer.* **74**:493.
Worcester, S.E. 1992. Adult rafting and larval swimming: does dispersal mode affect the recruitment of a colonial ascidian into new habitats? *Amer. Zool.* **32**:122A.
Worcester, S.E. 1989. Hydrodynamics of eelgrass canopies: implications for the dispersal of larvae of epiphytic invertebrates. *Amer. Zool.* **29**:30A.

SYMPOSIA & WORKSHOPS SPONSORED

Symposia Sponsored	105
Workshops Sponsored	108

SYMPOSIA SPONSORED

Symposium on Contamination of the Coastal Marine Environment

Coastal Toxicology Research Program, Bodega Bay, CA,

January 13-15, 1990

SPONSORS: Southern California Educational Initiative, Coastal Toxicology Program and the Bodega Marine Laboratory

CONTENT: Talks by student researchers and discussion of ongoing research funded by the Coastal Toxicology Program.

AUDIENCE: Student and faculty researchers.

Status and Effect of Toxicants in Coastal Waters of California

Southern California Academy of Sciences,

CSU Dominguez Hills, Carson, CA

May 11, 1990

SPONSORS: Southern California Educational Initiative, Coastal Toxicology Program and the Channel Islands Research Coordinating Committee

CONTENT: Symposium: Invited speakers presented research on the risks and impacts from various types of organic pollutants that find their way into our coastal waters. Talks addressed a range of topics - from the amount and distribution of contaminants in the environment to effects at various biological levels, representing different kinds of species (invertebrates, fishes and birds), as well as different kinds of potentially affected habitats (soft benthos to wetlands).

AUDIENCE: Student and faculty researchers, representatives from industry, state agencies, environmental groups, members of the public.

Fourth Annual Research Symposium
University of California Toxic Substances
Research and Teaching Program,
Santa Barbara, CA
November 3, 1990

- SPONSORS: Southern California Educational Initiative, TSR&TP Director's Office and the Coastal Toxicology Program
- CONTENT: Poster presentation and talks on results of ongoing research funded by the TSR&TP. Highlights of the meeting included presentations by Dr. Arthur Furst (USF) and Dr. Carl Cranor (UCR) on scientific and policy aspects associated with identification of potential human carcinogens.
- AUDIENCE: Student and faculty researchers, representatives from industry, state agencies, and UC campuses.

2nd Annual Symposium on Contamination of the Coastal Marine Environment
Coastal Toxicology Research Program, Bodega Bay, CA,
November 15-17, 1991

- SPONSORS: Southern California Educational Initiative, Coastal Toxicology Program and the Bodega Marine Laboratory
- CONTENT: Talks by student researchers and discussion of ongoing research funded by the Coastal Toxicology Program and the Southern California Educational Initiative.
- AUDIENCE: Student and faculty researchers.

**The Design of Environmental Impact Assessment Studies:
Conceptual Issues and Application in Coastal Marine Habitats**
Second Temperate Reef Conference
Auckland, New Zealand
January 9, 1992

- SPONSORS: University of Auckland, Leigh Marine Laboratory, and the Southern California Educational Initiative
- CONTENT: Invited speakers presented research on environmental assessment.
- AUDIENCE: International student and faculty researchers, representatives from government agencies, industry and environmental groups.

Sixth Annual Research Symposium
University of California Toxic Substances
Research and Teaching Program,
Santa Barbara, CA
November 14, 1992

- SPONSORS: Southern California Educational Initiative, TSR&TP Director's Office and the Coastal Toxicology Program
- CONTENT: Poster presentation and talks on results of ongoing research funded by the TSR&TP.
- AUDIENCE: Student and faculty researchers, representatives from industry, state agencies, and UC campuses.

Seventh Annual Research Symposium
University of California Toxic Substances
Research and Teaching Program,
Santa Cruz, CA
November 6, 1993

- SPONSORS: Southern California Educational Initiative, TSR&TP Director's Office and the Coastal Toxicology Program
- CONTENT: Poster presentation and talks on results of ongoing research funded by the TSR&TP.
- AUDIENCE: Student and faculty researchers, representatives from industry, state agencies, and UC campuses.

Third Symposium on Contamination of the Coastal Marine Environment
Coastal Toxicology Research Program, Bodega Bay, CA,
September 16-18, 1994

- SPONSORS: Southern California Educational Initiative, Coastal Toxicology Program and the Bodega Marine Laboratory
- CONTENT: Talks by student researchers and discussion of ongoing research funded by the Coastal Toxicology Program and the Southern California Educational Initiative. Discussion of future research opportunities and collaborations.
- AUDIENCE: Student and faculty researchers.

WORKSHOPS SPONSORED

Hydrocarbon Exploration Operations: A Two Day Workshop on the Effects Of Offshore Oil and Gas Operations on Hard Substrate Benthic Communities

University of California, Santa Barbara
Santa Barbara, CA
November 8-9, 1989

- SPONSORS: Minerals Management Service and the Southern California Educational Initiative
- CONTENT: Research presentations and round table discussion of agency and participant's concerns.
- AUDIENCE: Representatives from industry, state and federal agencies and environmental groups.

Southern California Educational Initiative Socioeconomic Workshop

Santa Barbara, CA
October 25-27, 1990

- SPONSORS: Southern California Educational Initiative and the Minerals Management Service
- CONTENT: Panel discussions that 1) summarized the National Academy critique; 2) described the current state of the art in analysis of socioeconomic impacts; 3) expand the range of issues that might be relevant to articulating and measuring impacts and 4) discussed how such an expanded range of issues could be best addressed in future research. Specialized working groups to specify more fully the types of research most needed within each research area.
- AUDIENCE: Researchers and students, representatives from industry, local, state and federal agencies, and environmental groups.

Marine Birds and Mammals of the Southern California Planning Area: Strategies and Methods for Population Surveys

Monterey, CA
January 22, 1991

- SPONSORS: Department of Wildlife and Fisheries Biology, University of California, Davis and the Southern California Educational Initiative
- CONTENT: Reviewed survey strategies and methods and discussed procedures of data handling in recent open-ocean surveys of marine birds and mammals. Research presentations and panel discussion on strategies that might be used in scheduled surveys in the Southern California Planning Area.
- AUDIENCE: Representatives from industry, state and federal agencies and environmental groups.

**Abandonment and Removal of Offshore Oil and Gas Facilities:
Education and Information Transfer**

Santa Barbara, CA
March 22, 1994

- SPONSORS: Minerals Management Service, California State Lands Commission and the Southern California Educational Initiative
- CONTENT: Short presentations by experts on topics ranging from the technical aspects of oil platform abandonment to the impact of abandonment projects on marine organisms. Break-out sessions to generate discussions on various issues, provide a forum for specific questions and to identify the main issues and questions of interest to the public, industry, and agencies.
- AUDIENCE: Petroleum industry and consultant participants, local, state and federal agency representatives, academia, public interest groups, fisherman and other ocean users.

Coastal Toxicology Research in California

Santa Barbara, CA
February 11, 1994

- SPONSORS: UC Coastal Toxicology Program, Southern California Educational Initiative and the UC TSR&TP Director's Office
- CONTENT: Short presentations by agency representatives and Coastal Toxicology Program/SCEI researchers. Discussion of common research needs.
- AUDIENCE: Local, state and federal agency representatives, academia, student trainees.

Socio-Economic Research Agenda Workshop

Santa Barbara, CA
January 20, 1995

- SPONSORS: Southern California Educational Initiative
- CONTENT: Short presentations on background of SCEI/CMI and agency needs. Discussion of MMS research needs and placing those needs into broader academic contexts as a method of attracting quality socio-economic researchers.
- AUDIENCE: Federal agency representatives and academia.

Interagency Rocky Intertidal Monitoring Network Workshop

Santa Barbara, CA
February 26-27, 1997

- SPONSORS: Southern California Educational Initiative
- CONTENT: Short presentations by agency representatives and monitoring program researchers. Workgroup discussion of monitoring needs and solutions.
- AUDIENCE: Local, state and federal agency representatives, consultants and academia.

**Decommissioning and Removal of Oil and Gas Facilities Offshore California:
Recent Experience and Future Deepwater Challenges**

Ventura, CA
September 23-25, 1997

- SPONSORS: Minerals Management Service, State Lands Commission and Southern California Educational Initiative
- CONTENT: Short presentations by experts on topics ranging from the technical aspects of oil platform removal, the environmental effects during the decommissioning process and the long-term effects of decommissioning projects on marine organisms and material disposal issues. Break-out sessions to generate discussions on various issues, provide a forum for specific questions and to identify the main issues and questions of interest to the public, industry, and agencies.
- AUDIENCE: Petroleum industry and consultant participants, local, state and federal agency representatives, academia, public interest groups, fisherman and other ocean users.

