

## **CURRICULUM VITAE (07/24)**

### **Robert H. Richmond, Ph.D.**

Research Professor and Director

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**Citizenship:** U.S.A.

### **Degrees:**

B.S. in Biology/Geology with High Distinction, University of Rochester, N.Y., 1976.

M.S. in Marine Environmental Sciences, Marine Sciences Research Center, SUNY at Stony Brook, N.Y., 1982.

Ph.D. in Biological Sciences, Dept. of Ecology and Evolution, SUNY at Stony Brook, N.Y., 1983.

### **Positions Held Since Ph.D.**

Director, Kewalo Marine Laboratory, University of Hawaii at Manoa 11/12 - Present

Research Professor, Kewalo Marine Laboratory, University of Hawaii at Manoa 2/04 - Present

President, International Society for Reef Studies 1/11 - 12/14 (4 year elected term; non-paid)

Affiliated Researcher, Center for Ocean Solutions, Stanford University, 3/12 - present

Acting Director, Kewalo Marine Laboratory, University of Hawaii at Manoa 9/05 - 3/06

Professor of Marine Biology, Univ. of Guam Marine Laboratory 5/92 - 1/04

Visiting Professional Colleague, Pacific Biomedical Research Center, Kewalo Marine Laboratory, University of Hawaii 1/92 - 6/92 (Sabbatical Leave)

Director, University of Guam Marine Laboratory, 10/88 - 9/91

Associate Professor of Marine Biology, Univ. of Guam Marine Laboratory 1/89 - 4/92

Assistant Professor of Marine Biology, Univ. of Guam Marine Laboratory 1/86 - 12/88

Affiliate Graduate Faculty Member, Zoology Dept., Univ. of Hawaii 1987 - present

Postdoctoral Fellow, Smithsonian Institution, 5/85 - 1/86 (Dr. Jeremy Jackson, Advisor)

Postdoctoral Fellow, Smithsonian Tropical Research Inst. 1/84 - 5/85 (Dr. H. Lessios, Advisor)

Research Affiliate, Hawaii Institute of Marine Biology, 1983 - 2006

### **Research Grants and Awards**

Sigma Xi Grant in Aid of Research, 5/79, \$2,500

New York State Biomedical Research Grant, 11/79, \$3,500

Short-term Fellowship, Smithsonian Tropical Research Inst., 4/79, \$1,500

National Science Foundation Research Initiation and Support Grant, through the Organization for Tropical Studies (OTS), 8/79, \$3,000

Seawright Travel Award, Western Society of Naturalists, 12/82, \$500

Lerner-Gray Research Award, American Museum of Natural History, 10/82, \$2,500

Post-Doctoral Fellowship, Smithsonian Tropical Research Institute, 1/84, \$22,000

Research Opportunity Grant, Smithsonian Institution 3/85, \$5,000

Post-Doctoral Fellowship, Smithsonian Institution, 4/85, \$19,000

Scholarly Studies Research Grant, Smithsonian Institution, 8/85, \$5,000

NSF Research Opportunity Award: Dispersal of Coral Planulae in Oceanic Currents.  
9/87, \$3,500 (w/ R. Scheltema, Woods Hole Oceanographic Inst.).

USDA HATCH grant: Reproductive Biology of Holothurians. 10/87 - 10/92, \$50,000.

Sea Grant: Extension aspects of Sea Cucumber Fisheries. 1/87 - 1/89, \$24,000.

National Marine Fisheries Service (S-K): Reproductive, Larval and Fisheries Biology of  
Commercially Valuable Holothurians. 1/88 - 1/92, \$238,000.

National Science Foundation: Equipment for the University of Guam Marine Laboratory. 9/89 -  
9/90, \$43,082.

National Science Foundation: Japanese Language Study. International Programs. \$21,600.

National Science Foundation: Equipment for the University of Guam Marine Laboratory.  
9/90 - 9/91, \$50,800.

National Science Foundation: Undergraduate Faculty Summer Workshop in the Biology and  
Ecology of Corals and Coral Reefs. 11/91 - 10/92, \$78,852. (Co-PI w/Krupp & P. Jokiel).

National Institutes of Health: The Reproductive Biology and Population Genetics of Corals. 8/90 -  
8/93, \$243,000.

National Science Foundation: Research Facilities Modernization Program. 1/91 - 1/93,  
\$130,475.

National Marine Fisheries Service (S-K): A Regional Management Plan for Sea Cucumber  
Fisheries in Micronesia. 3/92 - 2/93, \$56,200.

National Science Foundation: A & E for a Dormitory Facility for the University of Guam Marine  
Laboratory. \$20,000. 1/93 - 1/94

National Institutes of Health: The Reproductive Biology and Population Genetics of Corals. 6/94 -  
8/97, \$211,636

National Science Foundation: A Dormitory Facility for the University of Guam Marine Laboratory.  
\$200,000 (Co-PI with V. Paul). 1/95 - 12/96.

Center for Tropical and Subtropical Aquaculture: Cultivation of Corals for Reef Restoration and the  
Aquarium Trade. \$46,500. 3/95 - 4/97.

National Science Foundation: Equipment for the University of Guam Marine Laboratory. 9/96 -  
8/98, \$174,000

National Fish and Wildlife Foundation: A Test of Coral Reseeding Success Using Planula Larvae.  
10/96 - 9/97, \$3,000

National Fish and Wildlife Foundation: Dubbing of the Video Coral Reefs, Their Health, Our  
Wealth. 10/96 - 9/97, \$3,000

Environmental Protection Agency STAR Program: Development of Environmental Assessment,  
Mitigation and Restoration Techniques for Coral Reefs. \$353,723. 10/96 - 10/99.

National Institutes of Health: The Reproductive Biology and Population Genetics of Corals.  
8/97 - 8/2001, \$450,938

Environmental Protection Agency: Effects of Non-point Source Pollution on Coral Reefs. 10/97 - 9/98, \$10,000.

Department of Interior: Regional Workshop on Coral Cultivation and Reef Restoration for the Pacific Islands, 6/98 - 8/98, \$30,000

U.S. Coral Reef Initiative: Field Tests of Coral Reef Restoration Techniques, 12/98 - 11/99, \$5,000

Duty Free Shoppers/Guam Visitor's Bureau: Revitalization of Tumon Bay, 12/98 - 11/00, \$80,000.

U.S. Department of Defense, Legacy Program: Ocean Current Study for the Ratidian Marine Preserve, 6/99 - 10/01, \$63,250

U.S. Department of the Interior, Office of Insular Affairs: Marine Resources Pacific Consortium (MAREPAC); Technical Assistance and Capacity Building in Marine Resource Management in the Pacific Islands. 12/99 - 4/03, \$300,000 (renewable)

National Science Foundation: Undergraduate Mentoring in Environmental Biology, 9/99 - 12/03, \$274,936 (Co.PI w/ M. Hadfield, R. Gillespie and G. Roderick)

U.S. Environmental Protection Agency STAR Program: Integrating Coral Reef Ecosystem Integrity and Restoration Options with Watershed-Based Activities in the Pacific Islands, 2/00 - 12/03, \$795,259

U.S. Coral Reef Task Force, Guam Coral Reef Initiative. Assessment, Monitoring and Database Development for the Coral Reefs of Guam. 6/01 - 12/03. \$140,000

National Institutes of Health: The Reproductive Biology and Environmental Toxicology of Corals. 8/01 - 7/04, \$424,358

U.S. Coral Reef Task Force/NOAA Summer Course Assessment and Management of Coral Reefs. 11/02 - 11/03. \$75,000

National Institutes of Health: Biomedical Research at the University of Guam (SCORE). 8/02 - 7/04. \$501,622.

NOAA Coastal Ocean's Program, Coral Reef Ecosystem Studies: Integrating Coral Reef Ecosystem Integrity and Restoration Options with Watershed-based activities and MPA's in the Tropical Pacific Islands. 9/02 - 8/04. \$925,200

National Science Foundation, Field Stations and Marine Laboratories: Renovation of Facilities at the University of Guam Marine Laboratory. 10/02 - 9/04. \$123,570

NOAA, Development and Application of Molecular and Genetic Tools for Assessment and Monitoring of Coral Reefs. 7/04 - 6/05. \$149,560

Packard Foundation. Evaluation for the Packard Foundation Western Pacific Marine Conservation Program. 8/04 - 7/05. \$101,899 (with K. Lowry)

National Science Foundation. UMEB: Environmental Biology in the Pacific Islands 9/04 - 8/09. \$505,048 (co-P.I. with M. Hadfield, C. Smith and G. Grabowski).

NOAA. Coral Reef Ecosystem Studies: Integrating Coral Reef Ecosystem Integrity and Restoration Options with Watershed-based activities and MPA's in the Tropical Pacific Islands. 1/05 - 12/06. \$462,600

National Science Foundation. FSML: Improvements at the Kewalo Marine Laboratory. 6/05 - 5/07. \$28,604 (co-P.I. with M. Hadfield)

Dept. of the Interior. U.S. Coral Reef Task Force All Islands Committee Secretariat. 11/04 - 3/06 \$149,982

NOAA. Hawaii Coral Reef Initiative Research Program VIII. 8/05 - 2/07. \$1,441,485 (co-P.I. w/ M. Hamnett).

NOAA. Support for a workshop to synthesize data collected under a NOAA CSCOR/COP CRES research program, develop a scientifically based policy framework, and provide a consensus on management-directed implementation strategies. 12/05 – 11/06. \$24,997

National Science Foundation. ATE: Partnership for advanced marine and environmental science training for Pacific Islanders. 9/05 - 8/09. \$887,325

Dept. of the Interior. U.S. Coral Reef Task Force All Islands Committee Secretariat. 4/06 – 3/08 \$149,982

NOAA. Hawaii Coral Reef Initiative Research Program IX. 8/06 to 7/08, \$1,375,739 (co-P.I. w/ M. Hamnett).

Pew Fellows Program in Marine Conservation. The Development of Molecular Biomarkers of Stress in Corals as a Tool for Coral Reef Conservation. 2/06 – 12/10. \$150,000

NOAA. Hawaii Coral Reef Initiative Research Program X. 9/07 to 8/09, \$916,159 (co-P.I. w/ M. Hamnett).

NOAA/Hawaii Coral Reef Initiative. Watershed impacts on the coral communities of Maunalua Bay, Hawaii. 10/07 – 12/08. \$85,540.

NOAA. Hawaii Coral Reef Initiative Research Program XI. 8/08 to 9/10, \$250,000 (co-P.I. w/ M. Hamnett).

National Fish and Wildlife Foundation. Watershed Impacts on the coral reef communities of Maunalua Bay, Hawaii. 1/09 – 3/11. \$87,500

NOAA. Effects of Watershed Discharges on Coastal Coral Reefs. 1/09 – 12/09. \$124,685

NOAA. Hawaii Coral Reef Initiative Research Program XII. 8/09 to 9/11, \$681,818 (co-P.I. w/ M. Hamnett).

NSF- FSML: Improvements at the Kewalo Marine Laboratory. 9/09–8/11. \$174,206 (Co-P.I. w/ M. Martindale).

NSF: MRI: Acquisition of a versatile single cell labeling and high resolution multi-channel imaging system. 9/09-8/11. \$470,751 (Co-P.I. with M. Martindale, M. Hadfield and E. Seaver).

NOAA. Effects of Watershed Discharges on Coral Reefs in Maunalua Bay, Hawaii. 1/10–3/11. \$124,105

NSF - URM: Environmental Biology in the Pacific Islands. 9/08 – 8/14. \$893,738 (Co-P.I. w/ M. Hadfield, C. Smith, R. Toonen and G. Grabowsky)

NOAA. Hawaii Coral Reef Initiative Research Program XIII. 9/11 to 8/12, \$999,000 (co-P.I. w/ M. Hamnett).

U.S. Army Corps of Engineers. Modeling of the Effects of Dredging on the Coral Reefs of Apra Harbor, Guam. 3/11 - 6/12. \$76,000.

NSF- Partnership for Advanced Marine and Environmental Science Training for Pacific Islanders. 9/09 – 8/16. \$987,458.

NOAA. From Science to Conservation: Linking Coral Reefs, Coastal Watersheds and Their Human Communities in the Pacific Islands. 10/09–12/16. \$928,427.

NSF- FSML: Pacific Ocean marine lab technology and research space optimization. 10/12 - 9/14. \$277,003

National Fish and Wildlife Foundation. Watershed Mitigation Efficacy for coral reef conservation. 3/13 - 8/18. \$158,454.

Hawaii State Department of Health: Biomarkers of toxicant exposure in corals in Hawaii. 8/13 – 12/17. \$92,105.

NSF- Partnership for Advanced Marine and Environmental Science Training for Pacific Islanders. 5/16 – 4/20. \$899,997.

Support for the 13<sup>th</sup> International Coral Reef Symposium. NOAA, Packard Foundation, Moore Foundation, Department of the Interior, Pew Environmental Group. 6/16. \$300,000.

NSF-FSML: Improvements to the Capacity of the Kewalo Marine Laboratory. 8/18 – 7/18. \$199,210.

NOAA: Advancing Coral Conservation by Increasing Reef Resilience: Understanding and Managing Chronic Water Quality Stressors. 8/17 – 12/19. \$74,998.

National Fish and Wildlife Foundation. Advancing New Molecular Tools to Identify Thresholds of Key Stressors to Coral Reefs. 4/18 – 7/19. \$75,128.

Maui Nui Marine Resource Council. Assessing and addressing the state of Maui’s coral reef ecosystems. 1/18 – 12/19. \$40,000.

U.S. Fish and Wildlife Service. Assessing the effects of the rodenticide Brodifacoum on corals and coral reefs. 08/19 – 07-20. \$64,500

NSF-ATE Partnership for Advanced Marine and Environmental Science Training for Pacific Islanders. Supplemental. 5/19 – 4/21. \$113,645.

NSF-ATE Enhanced Marine and Environmental Science Training for Pacific Island Community College Students. 5/2020 – 4/2024. \$720,000.

U.S Fish and Wildlife Service/Army Corps of Engineers. Dredging Effects on Coral. 8/20 – 7/21. \$164,824

U.S Fish and Wildlife Service/U.S. Space and Missile Defense Program. Assessment of the Effects of Missile Testing on Corals. \$175,684

National Fish and Wildlife Foundation. Determining and Addressing the Causes of Declining Reproductive Success in Corals in Florida and Hawaii. 10/20 – 12/22. \$149,803.

Herbert W. Hoover Foundation. Determining and Addressing the Causes of Declining Reproductive Success in Corals in Florida. 1/21 – 12/22. \$50,000.

Hawaii Division of Aquatic Resources. Ecology and Reproductive Biology of Harbor Porites. 1/22 – 4/25. \$155,300.

NSF-SSTEM Scholarships to Support Students at Hawaiian and Pacific Island Institutions of Higher Education in STEM Degree Programs. 10/2023 – 9/2028. \$4,999,715

### **Selected Publications**

Richmond, R.H. 1982. Energetic Considerations in the Dispersal of Pocillopora damicornis Planulae. In: Proc. Fourth Intl. Coral Reef Symposium, Manila. Vol. 2, pp. 153-157

Richmond, R.H. and P.L. Jokiel. 1984. Lunar Periodicity in Larva Release in the Reef Coral Pocillopora damicornis at Enewetak and Hawaii. Bulletin of Marine Science 34(2): 280-287.

Richmond, R.H. 1985. Reversible Metamorphosis in Coral Planula Larvae. Marine Ecology Progress Series. 22: 181-185.

Richmond, R.H. 1985. Variations in the Population Biology of Pocillopora damicornis Across the Pacific Ocean. In: Proc. 5th Intl. Coral Reef Cong., Tahiti. Vol. 6, pp. 101-106.

Jokiel, P.L., R.H. Richmond, and R.A. Rogers, eds. 1986. Coral Reef Population Biology. A collection of 41 contributed papers. Hawaii Institute of Marine Biology - University of Hawaii Sea Grant Tech. Report. No. 37. 501 pp.

- Richmond, R.H. 1987. Energetics, Competency, and Long-Distance Dispersal of Planula Larvae of the Coral Pocillopora damicornis. *Marine Biology* 93: 527-533.
- Richmond, R.H. 1987. Energetic Relationships and Biogeographical Differences Among Fecundity, Growth, and Reproduction in the Reef Coral Pocillopora damicornis. *Bulletin of Marine Science* 41(2): 594-604.
- Richmond, R.H. 1987. Reproduction and Recruitment of Corals: Comparisons Among the Caribbean, the Eastern Pacific, the Indo-West Pacific, and the Red Sea. *UNESCO Reports in Marine Science* 46:239-253
- Guzman, H.M., J. Cortes, R.H. Richmond, and P.W. Glynn. 1987. Efectos del Fenomeno de "El Niño-Oscilacion Surena" 1982/83 en los Arrecifes de la Isla del Cano, Costa Rica. *Rev. Biol. Trop.* 35(2):325-332.
- Richmond, R.H. 1988. Competency and dispersal potential of planula larvae of a spawning versus a brooding coral. *In: Proc. 6th Intl. Coral Reef Symp., Townsville. Vol 2, pp 827- 831.*
- Glynn, P.W., J. Cortes, H.M. Guzman, and R.H. Richmond. 1988. El Niño (1982-83) associated coral mortality and relationship to sea surface temperature deviations in the tropical eastern Pacific. *In: Proc. 6th Intl. Coral Reef Symp., Townsville. Vol. 3, pp 237-243*
- Richmond, R.H. 1990. The Effects of the El Niño Southern Oscillation on the Dispersal of Corals and Other Marine Organisms. *In: Some Ecological Consequences of the 1982/83 El Niño Event to Marine Life. P. W. Glynn (ed.). Elsevier Oceanography Series, 52. Elsevier North Holland Press.127-140.*
- Richmond, R.H. 1990. Relationships Among Reproductive Mode, Biogeographic Distribution Patterns and Evolution in Scleractinian corals. *Advances in Invertebrate Reproduction V. Elsevier North Holland Press. pp. 317-322.*
- Richmond, R.H. and C.L. Hunter 1990. Reproduction and recruitment of corals: Comparisons among the Caribbean, the tropical Pacific, and the Red Sea. *Marine Ecology Progress Series* 60:185-203.
- Guzman, H.M., J. Cortes, P.W. Glynn, and R.H. Richmond. 1990. Coral Mortality associated with dinoflagellate blooms in the eastern Pacific (Costa Rica and Panama). *Marine Ecology Progress Series* 60:299-303.
- Richmond, R.H. 1993. Coral reefs: Present problems and future concerns resulting from anthropogenic disturbance. *American Zoologist.* 33:524-536.
- Richmond, R.H., and P. Martinez 1993. Sea cucumber fisheries in the Galapagos Islands: biological aspects, impacts and concerns. *In: Evaluation de la Pesqueria de Pepinos de Mar en las Islas Galapagos - Ecuador. IUCN, Quito, Ecuador.*
- Richmond, R.H. 1994. Coral reef resources: Pollution's impacts. *Forum for Applied Research and Public Policy, Oak Ridge National Laboratory* 9:54-57.
- Richmond, R.H. 1994. Effects of coastal runoff on coral reproduction. Pp. 360-364 *In R.N. Ginsburg, ed., Proceedings of the Colloquium on Global Aspects of Coral Reefs: Health, Hazards and History, Univ. of Miami, 1993.*
- Richmond, R.H. 1995. Hybridization as an evolutionary force in mass-spawning corals. *Journal of Cellular Biochemistry* 19B:341

- Richmond, R.H. 1996. Coral Reef Health: Concerns, Approaches and Needs. Pp. 25-30 *In* M.P. Crosby, G.R. Gibson and K.W. Potts (eds.), *A Coral Reef Symposium on Practical, Reliable, Low Cost Monitoring Methods for Assessing the Biota and Habitat Conditions of Coral Reefs*, January 26-27, 1995. OCRM, NOAA, Silver Spring, MD.
- Richmond, R.H., D. Hopper and P. Martinez. 1996. The biology and ecology of sea cucumbers. Pp. 7-25 *In* R.H. Richmond, (ed.), *Suggestions for the Management of Sea Cucumber Resources in Micronesia*. Technical Report No. 101, Univ. of Guam Marine Laboratory. 75 pp.
- Richmond, R.H. 1997. Reproduction and Recruitment in Corals: Critical Links in the Persistence of Reefs. Pp. 175-197 *In* C.E. Birkeland, (ed.), *Life and Death of Coral Reefs*. Chapman and Hall, Publishers. N.Y.
- Peters, E.C., N.J. Gassman, J.C. Firman, R.H. Richmond, and E.A. Power. 1997. Ecotoxicology of Tropical Marine Ecosystems. *Journal of Environmental Toxicology and Chemistry* (Annual Review issue/invited) 16:12-40.
- Martinez P., and R.H. Richmond. 1998. Effect of diet on growth and larval development of the sea cucumber *Holothuria nobilis* in Guam, *in* Mooi & Telford (eds) *Echinoderms*. Balkema Press, San Francisco.
- Hopper, D.R., C. Hunter and R. Richmond. 1998. Sexual reproduction of the tropical sea cucumber, *Actinopyga mauritiana* (Echinodermata: Holothuroidea), in Guam. *Bulletin of Marine Science* 63(1):1-9.
- Richmond, R.H. 1999. Sea cucumbers. Pages 145-155 *In*: *Marine and Coastal Biodiversity in the Tropical Island Pacific region*. Vol. II. Population, Development and Conservation priorities. L.G. Eldredge, J.E. Maragos, P.F. Holthus and H.F. Takeuchi (eds.). Program on Environment, East-West Center, Univ. of Hawaii. 456 pp.
- Richmond, R.H. 2000. Coral Conservation Biology Applied to Policy Development and Management Initiatives. *In*: *Information Management and Decision Support for Marine Biodiversity Protection and Human Welfare: Coral Reefs*. United Nations Environmental Program. Pp.139-143
- Birkeland, C.E., P. Craig, G. Davis, A. Edward, Y. Golbuu, J. Gutierrez, J. Higgins, N. Idechong, J. Maragos, K. Miller, G. Paulay, R. Richmond (coordinating author), A. Tafleichig, and D. Turgeon. 2000. Status of Coral Reefs of American Samoa and Micronesia: US-Affiliated and Freely Associated Islands of the Pacific. Pp 199-217 *In* C. Wilkinson, ed. *Status of Coral Reefs of the World: 2000*. Australian Inst. of Marine Sciences. 363 pages.
- McKenna, S.A., R. H. Richmond and G. Roos. 2001. Assessing the Effects of Sewage on Coral Reefs: Developing Techniques to Detect Stress Before Coral Mortality. *Bulletin of Marine Science* 69(2): 517-523.
- Richmond, R.H. and G. Davis. 2002. Status of the coral reefs of Guam. Pp. 189 - 194 *in* *The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2002*. National Oceanic and Atmospheric Administration, Silver Spring, MD. 265 p.
- Wolanski, E., R. Richmond, L. McCook and H. Sweatman. 2003. Mud, marine snow and coral reefs. *American Scientist* 91:44-51.
- Wolanski, E. R. Richmond, G. Davis, E. Deleersnijder and R. Leben. 2003. Eddies around Guam, an Island in the Mariana Islands Group. *Continental Shelf Research* 23(10):991-1003.

- Golbuu, Y., Victor, S., Wolanski, E. and Richmond, R.H. 2003. Trapping of fine sediment in a semi-enclosed bay, Palau, Micronesia. *Estuarine, Coastal and Shelf Science* 57, 1-9.
- Wolanski, E., R. Richmond, G. Davis and V. Bonito. 2003. Water and fine sediment dynamics in transient river plumes in a small, reef-fringed bay, Guam. *Estuarine, Coastal and Shelf Science*. 56:1029-1040
- Wolanski, E. R.H. Richmond and L. McCook. 2004. A model of the effects of land-based human activities on the health of coral reefs in the Great Barrier Reef and in Fouha Bay, Guam, Micronesia. *Journal of Marine Systems* 46:133-144.
- Victor, S., Y. Golbuu, E. Wolanski and R. Richmond. 2004. Fine sediment trapping in two mangrove-fringed estuaries exposed to contrasting land use intensity in Palau, Micronesia. *Wetlands Ecology and Management*. 12, 277-283.
- Richmond, R.H. 2005. Recovering Populations and Restoring Ecosystems: Restoration of Coral Reefs and Related Marine Communities. Pp. 393-409 *In* E. Norse and L. Crowder eds. *Marine Conservation Biology: The Science of Maintaining the Sea's Biodiversity*. Island Press.
- Richmond, R.H. 2005. Coral reproduction and recruitment as tools for studying the ecotoxicology of coral reef ecosystems. Pp. 331-338, *In* G. Ostrander, ed. *Techniques in Aquatic Toxicology*, Vol. II. CRC Press.
- Sinclair CS, Richmond RH, Knobbe ET, Basslear C and Ostrander GK. Passive dosimeters for measurement of ultraviolet radiation in marine environments. *In*: GK Ostrander (ed) *Techniques in Aquatic Toxicology*, Vol. 2, Lewis Publishers/CRC Press, Boca Raton, FL. January 2005.
- Downs, C.A., C.M. Woodley, R.H. Richmond, L.L. Lanning, and R. Owen. 2005. Shifting the Paradigm for Coral-Reef 'Health' Assessment. *Marine Pollution Bulletin*. 51: 486-494.
- Victor, S. and R.H. Richmond. 2005. Effect of copper on fertilization success in the coral *Acropora surculosa*. *Marine Pollution Bulletin*. 50:1448-1451.
- Victor, S., L. Neth, Y. Golbuu, E. Wolanski, and R. Richmond. 2006. Sedimentation in mangroves and coral reefs in a wet tropical Island, Pohnpei, Micronesia. *Estuarine, Coastal and Shelf Science*. 66:409-416.
- Downs, C.A., R. H. Richmond, W.J. Mendiola, L. Rougee, and G. Ostrander. 2006. Cellular physiological effects of the M.V. Kyowa Violet grounding on the hard coral *Porites lobata*. *Environmental Toxicology and Chemistry* 25: 3171-3180.
- Rougee, L., C. Downs, R. Richmond and G. Ostrander. 2006. Alteration of normal cellular profiles in the stony coral *Pocillopora damicornis*, following laboratory exposure to fuel oil. *Environmental Toxicology and Chemistry* 25: 3181-3187.
- Sinclair, C.S., R.H. Richmond, G.K. Ostrander. 2007. Characterization of the telomere regions of the scleractinian coral *Acropora surculosa*. *Genetica* 129: 227-233.
- Golbuu, Y., and R.H. Richmond. 2007. Substratum Preferences in Planula Larvae of two Species of Scleractinian Corals, *Goniastrea retiformis* and *Stylarea punctata*. *Marine Biology* 152:639-644.
- Richmond, R.H., Rongo, T., Golbuu, Y., Victor, S., Idechong, N., Davis, G., Kostka, W., Neth, L., Hamnett, M., and Wolanski, E. 2007. Watersheds and Coral Reefs: Conservation Science, Policy and Implementation. *BioScience* 57: 598-607.
- Rougee, L., Ostrander, G.K., Richmond, R.H., and Lu, Y.N. 2007. Establishment, characterization and viral susceptibility of two cell lines derived from goldfish *Carassius auratus* muscle and swim bladder. *Diseases of Aquatic Organisms* 77:127-135



- Wolanski, E., and R.H. Richmond. 2008. Estuary Restoration. *In: Sven Erik Jørgensen and Brian D. Fath (Eds), Ecological Engineering. Vol. 2 of Encyclopedia of Ecology, 5 vols. pp. 1422-1427 Oxford: Elsevier.*
- Golbuu, Y., Fabricius, K., Victor, S., and R.H. Richmond. 2008. Gradients in coral reef communities exposed to muddy river discharge in Pohnpei, Micronesia. *Estuarine, Coastal and Shelf Science* 76: 14-20.
- Richmond, R.H., Houk, P., Trianni, M., Wolanski, E., Davis, G., Bonito, V., and Paul, V.J. 2008. Aspects of Biology and Ecological Functioning of Coral Reefs in Guam and the Commonwealth of the Northern Mariana Islands. Pp. 719 – 740 *In: Coral Reefs of the USA; Coral Reefs of the World vol. 1. B.M. Riegl and R.E. Dodge, Eds. Springer Science.*
- Richmond, R.H. 2008. Environmental protection: applying the precautionary principle and proactive regulation to biotechnology. *Trends in Biotechnology* 26(8): 460-467.
- Richmond, R.H., W. Kostka and N. Idechong. 2009. Coral Biology and Conservation. *Encyclopedia of Islands. R. Gillespie. Ed., University of California Press. Pp. 779-785.*
- Wolanski, E., Martinez, J., and Richmond R.H. 2009. Quantifying the impact of watershed urbanization on a coral reef: Maunalua Bay, Hawaii. *Estuarine, Coastal and Shelf Science* 84: 259-268.
- Richmond, R.H. and E. Wolanski. 2011. Coral Reefs: Past Efforts and Future Horizons. Pp. 3-12 *in Corals Reefs: An Ecosystem in Transition. Z. Dubinsky and N. Stambler, eds., Springer Science, 552 pp.*
- Golbuu, Y., E. Wolanski, P. Harrison, R.H. Richmond, S. Victor and K. E. Fabricius. 2011. Effects of land use change on characteristics and dynamics of watershed discharges in Babeldaob, Palau, Micronesia. *Journal of Marine Biology*
- Golbuu, Y., van Woesik, R., Richmond, R.H., Harrison, P., Fabricius, K.E. 2011. River discharge reduces reef coral diversity in Palau. *Marine Pollution Bulletin.* 62:824-831
- Knutson, S., C.A. Downs and R.H. Richmond. 2012. Concentrations of Irgarol in selected marinas of Oahu, Hawaii and effects on settlement of coral larval. *Ecotoxicology.* 21(1):1-8.
- Vijayavel, K., C.A. Downs, G.K. Ostrander and R.H. Richmond 2012. Oxidative DNA damage induced by iron chloride in the larvae of the lace coral *Pocillopora damicornis*. *Comparative Biochemistry and Physiology Part C: Toxicology and Pharmacology* 155:275-280.
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- Richmond, R.H., K.H. Tisthammer and N.P. Spies. 2018. The Effects of Anthropogenic Stressors on Reproduction and Recruitment of Corals and Reef Organisms. *Frontiers in Marine Science*, 02 July 2018 | <https://doi.org/10.3389/fmars.2018.00226>
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- Brown, N. P., Z.H. Forsman, K.H. Tisthammer, and R.H. Richmond, 2020. A resilient brooding coral in the broadcast spawning *Porites lobata* species complex: a new endemic, introduced species, mutant, or new adaptive potential? *Coral Reefs*. DOI: 10.1007/s00338-020-01922-w CORE-D-19-00169R2
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- Nalley, E.M., L. J. Tuttle, A.L. Barkman, E.E. Conklin, D. M. Wulstein, R. H. Richmond, M. J. Donahue. 2021. Water quality thresholds for coastal contaminant impacts on corals: A systematic review and meta-analysis. *Science of the Total Environment*, Vol. 794 (148362). <https://doi.org/10.1016/j.scitotenv.2021.148632>
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- Ferguson, C.E., A. Singeo, R.H. Richmond, N.J. Bennett. 2022. The tragedy of the commodity is not inevitable: Indigenous resistance prevents fisheries collapse in the Pacific Islands. *Global Environmental Change*. 73:102477. <https://doi.org/10.1016/j.gloenvcha.2022.102477>

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- Richmond, R.H. and K. Buesseler. 2023. The future of ocean health. *Science*, 381(927). DOI: [10.1126/science.adk5309](https://doi.org/10.1126/science.adk5309)
- Ashley J, McKelvie H, Freeman J, Shpilker P, Zane LH, Becker DM, Cowen L, Richmond, RH, Paul VJ, Seneca FO, Putnam HM. 2024. Characterizing transcriptomic responses to sediment stress across location and morphology in reef-building corals. *PeerJ* 12:e 16654. <https://doi.org/10.7717/peerj.16654>
- Tisthammer KH, Martinez JA, Downs CA and Richmond RH (2024) Differential molecular biomarker expression in corals over a gradient of water quality stressors in Maunaloa Bay, Hawaii. *Front. Physiol.* 15:1346045. doi: 10.3389/fphys.2024.1346045
- Dingyi Wang, Qunfang Zhou, Yongguang Yin, Dawei Lu, Ligang Hu, Robert H. Richmond, Hyo-Bang Moon, Bing Yan, and Guibin Jiang 2024. Implications of Fukushima's Radioactive Water Discharge on Global Environmental Sustainability. *Environmental Science & Technology* 58 (7), 3061-3064 DOI: 10.1021/acs.est.4c00955
- Wilkins, K, J.Y. Yew, M. Seeley, R.H. Richmond. 2024. Microplastic Leachate Negatively Affects Fertilization in the Coral *Montipora capitata*, *Integrative and Comparative Biology*, 2024: 143, <https://doi.org/10.1093/icb/icae143>

## Multimedia

- Richmond, R.H., G. Davis, F. Rivera and L. Mariano. 1997. Coral Reefs: Their Health, Our Wealth. 24 min. educational video produced by the Univ. of Guam Marine Lab and the Guam Division of Aquatic and Wildlife Resources.

## Awards

- Oahu Surfrider Foundation, John Kelly Lifetime Achievement Award, 2017  
 Elected Fellow, International Coral Reef Society, 2016  
 U.S. Coral Reef Task Force, 2014 "In recognition for scientific research, mentoring and service."  
 Pew Fellow in Marine Conservation, 2006  
 Aldo Leopold Fellow in Environmental Leadership, 2004  
 National Award for "Outstanding Scientific Advancement of Knowledge," U.S. Coral Reef Task Force, October, 2003  
 Administrator of the Year, University of Guam, 1990

## Additional Academic and Research Experience

- Research Assistant/ Lab Technician III, Dept. of Radiation Biology and Biophysics, Univ. of Rochester Medical School: Uptake of radioactive Ru-106 by freshwater crayfish, 1975-6.  
 Instructor/Acting Director, Carriacou Marine School, Canadian Junior College, Carriacou, Grenada, West Indies, 1976-78.

Graduate Research Assistant, Mid-Pacific Research Lab, Enewetak Atoll, 1980-82, coral reef biology, radioecology.

Graduate Research Assistant, SUNY at Stony Brook, 1978-80: Effects of stabilized coal-waste on marine benthic communities.

Graduate Teaching Assistant, SUNY at Stony Brook, 1982-3, Marine Biology, Invertebrate Zoology

Scientific Diver, Hawaii Undersea Research Laboratory, Univ. of Hawaii at Manoa

Assistant Program Coordinator, Hawaii Institute of Marine Biology Summer Graduate Program in Coral Population Biology. 29 students, 8 staff. 1983.

Course Co-Coordinator, Smithsonian - U of Panama Graduate Marine Ecology Program for Latin American students, 1985.

Research Coordinator, UOG-University of the Ryukyus Scientific Exchange Program

Acting Dean, Graduate School and Research, Univ. of Guam.

Editor, MICRONESICA, Journal of the University of Guam 1986-89

Organizing Committee, 7th International Coral Reef Symposium

Editor, Proceedings, 7th International Coral Reef Symposium, Guam 1992

Chief Scientist, World Conservation Union (IUCN)-sponsored mission to study effects of exploitative sea cucumber fisheries on the Galapagos Islands

Program Director, Univ. of Guam National Institutes of Health Minority Biomedical Research Support Program

Invited Plenary Speaker, 8<sup>th</sup> Pacific Science Inter-congress, Okinawa, Japan

Member, Pacific Science Association Committee on Biodiversity

Panelist, EPA/STAR Ecological Indicators Program

Member, organizing committee, First International Symposium on Marine Conservation

Invited participant, National Ocean Conference, Monterey CA, 6/98

Pacific Scientific Representative, U.S. Coral Reef Task Force 10/98 - present

Elected Council Member, International Society for Reef Studies, 1/99 - 12/02

Invited speaker, Center for Marine Conservation workshop on Coral Reefs, Maui, 3/99

Session Organizer, International Conference on Scientific Aspects of Coral Reef Assessment, Monitoring and Restoration, NCRI/Nova University, April, 1999.

Invited participant, WWF-sponsored International Workshop on Galapagos Biodiversity and Conservation, Charles Darwin Research Station, Galapagos Islands, May, 1999.

Panelist, USEPA/STAR Estuarine Indicators Program

Member, Science and Policy Advisory Committee, Palau International Coral Reef Center

Member, Steering Committee for Pacific Island Regional Assessment of the Consequences of Climate Change and Variability, 3/00 – 11/00

Member, Organizing Committee, Workshop on Climate Change and Island Coastal Communities, East-West Center, Hawaii, 11/00

Invited participant, Inaugural meeting of the Federated States of Micronesia Coastal Marine Resources Consortium, Pohnpei, 12/00

Invited presenter, Pew Oceans Commission hearings, Maui, 2/01

Organizing Committee Member and Session Organizer, 10<sup>th</sup> Pacific Science Association Inter-congress, Guam 6/01

Invited Panelist, 20<sup>th</sup> Annual EPA Pacific Islands Environment Conference 6/01

Invited Keynote Speaker, 33<sup>rd</sup> Anniversary Conference, Inter-university Institute for Marine

Sciences, Eilat, Israel, 10/01  
 Invited Panelist, Congressional Subcommittee on Fisheries Conservation, Wildlife and Oceans to testify on Sea Grant re-authorization bill, 11/01  
 Invited participant, Ecoregional Planning Workshop on Protected Areas, Federated States of Micronesia/TNC, 1/02  
 Invited presenter, Pacific Regional meeting on Coral Reef Assessment and Monitoring, Global Coral Reef Monitoring Network, Palau International Coral Reef Center, 1/02  
 Invited participant, COMPASS conference on Marine Protected Areas, Monterey, CA, 1/02  
 Invited Panelist, U.S. Commission on Ocean Policy, Pacific Hearings, Honolulu, HI, 5/02  
 Invited Speaker, U.S. Congressional Symposium on the Oceans, Capitol Hill Oceans Week, Washington, D.C. 6/02  
 Invited Panelist, U.S. Coral Reef Task Force, Science Panel, Washington, D.C. 2/03  
 Invited Panelist, Hawaii Workshop on the Effects of Land-Based Sources of Pollution on Coral Reefs, Honolulu, 3/03  
 Keynote Speaker, EPA-sponsored Pacific Workshop on the Effects of Land-based Sources of Pollution on Coral Reefs, 6/03  
 Course Director, Graduate Summer Program, Assessment and Management of Coral Reefs, University of Guam Marine Laboratory, 6/03  
 Member, Scientific Advisory Group, Joint Ocean Commission Initiative 1/04 - present  
 Member, Organizing Committee, 10<sup>th</sup> International Coral Reef Symposium, Okinawa, Japan, 6/04  
 Member, University of the Virgin Islands NSF-EPSCoR Program Review Committee 9/04 - present  
 Co-Chair and Session Organizer, Oceans Sciences Meeting, Orlando, Florida 3/08  
 Review Team Member, Global Environmental Facility/World Bank Targeted Coral Reef Research Project. 1/08 – 4/08.  
 Session Chair and Organizer, Hawaii Conservation Conference, Honolulu 8/08  
 Chair, Selection Committee, 12<sup>th</sup> International Coral Reef Symposium 3/08 – 5/09  
 Panelist, NSF workshop on undergraduate education, Honolulu 12/08  
 Member, NOAA Land-based Sources of Pollution Working Group 6/08-3/09  
 Associate Editor, *Marine Biology* 10/09 – 12/11  
 Chair, proposal review panel, Hawaii Undersea Research Laboratory, 7/10  
 President, International Society for Reef Studies, 1/11 - 12/14  
 Member, Climate Change and Coral Reefs working group, Center for Ocean Solutions, 6/11-6/12  
 Organizer and Chair, session on Genomics and Proteomics as tools for detecting sub-lethal stress in coral reef organisms. 12<sup>th</sup> International Coral Reef Symposium, Cairns, Australia, 7/12  
 Member, Board of Directors, Palau International Coral Reef Center, 2/14 – present  
 Member, National Association of Marine Laboratories Board 1/2014 – 12/2022  
 Officer (Treasurer) Western Association of Marine Laboratories 1/2026 - present  
 Member, External Advisory Committee, Center for Ocean Solutions, 3/15 – 4/18  
 Member, external advisory committee, Univ. of Guam NSF EPSCoR program  
 Convener/Organizer, 13<sup>th</sup> International Coral Reef Symposium, 6/16  
 Chair, Pacific Islands Leaders' Summit, 13<sup>th</sup> International Coral Reef Symposium, 6/16  
 Member, Scientific Advisory Committee, Pew Ocean Legacy Program 10/16 - present  
 Member, Board of Directors, Coral Reef Alliance, 8/17 – 9/20  
 Member, Science Advisory Board, Pew Bertarelli Ocean Legacy Program 12/17 - present

Member, Organizing Committee, Pacific Judicial Council Symposium on Science and Environmental Law, Guam, 11/17  
Research Member, Community Committee in support of the Pacific Remote Islands National Marine Monument. 3/19 – present.  
Member, National Academies of Sciences, Engineering and Medicine, Ocean Studies Board, Committee on Interventions to Increase the Resilience of Coral Reefs, 1/18 – 12/19.  
Member, Advisory Committee to the Government of Palau, Palau National Marine Sanctuary, Center for Ocean Solutions, Stanford University  
Session Chair and organizer, 14<sup>th</sup> International Coral Reef Symposium, Bremen Germany, 7/21  
Member, National Academies of Sciences, Engineering and Medicine, Committee on environmental impact of currently marketed sunscreens and potential human impacts of changes in sunscreen usage. 2/21 – 12/21.  
Session Chair and co-organizer, Ocean Sciences Meeting 2022.  
Member, Expert Scientific Advisory Panel, Pacific Islands Forum, Fukushima Nuclear Power Plant radioactive waste plan. 12/21 – present.  
Organizing Committee, session chair, Our Oceans Conference, Palau, 10/21 – 4/22  
Session co-organizer, Reef Futures meeting, Key Largo, Florida, 9/2022  
Member, Scientific Advisory Committee, Palau National Marine Sanctuary 12/2022  
Member, National Biodiversity and Climate Change Assessment Guidance Committee. 1/23 - present

### **Professional Memberships**

International Society for Reef Studies (President, term 1/01/11 – 12/31/14)  
Association for the Sciences of Limnology and Oceanography  
American Institute for Biological Sciences  
Pacific Science Association  
American Association for the Advancement of Science  
International Union for the Conservation of Nature

### **Miscellaneous Government Contracts and Projects**

Marine Resource Surveys of Chuuk Lagoon  
Rapid Ecological Assessment Surveys of Kwajalein Atoll  
Rapid Ecological Assessment Surveys of Palau's Reefs  
Coastal Zone Management Workshop, Yap, FSM  
Assessment of Reef Damage from a Ship Grounding, Yap, FSM  
Regional Fisheries Officers Management Workshop, Micronesia  
Assessment of Reef Damage from a Ship Grounding, Guam  
Assessment of Reef Damage from a Mooring Buoy Accident, Guam  
Biological Surveys of Three Ocean Sewage Outfalls, Guam 1989 - 1994, \$106,000  
Environmental Assessment of Leachate from a Municipal Dump, Saipan, CNMI  
Evaluation of the Sea Cucumber Fishery in the Galapagos Islands, IUCN and the Charles Darwin Foundation

Coral Reef Educational Workshops, Government of Palau  
 Potential Impacts of Proposed Development Projects, Palau  
 Assessment of Reef Damage from a Ship Grounding, Satawal, Yap  
 Assessment of Reef Damage from a Ship Grounding, Pohnpei  
 Coral Reef Monitoring Program for Palau, 1994, \$20,000  
 Coral Reef Monitoring Program for Saipan, 1994, \$5,800  
 Educational Video on Coral Reefs for the Guam Division of Aquatic and Wildlife Resources, 1995-6, \$32,000  
 Assessment of Reef Damage from a Ship Grounding, Kosrae  
 Management of Sea Cucumber Resources, Yap  
 Coral Reef Surveys for the placement of Mooring Buoys, Yap, 1995-7, \$20,000  
 Assessment of reef damage to Coral Gardens Reef, Rota, CNMI from an underwater detonation  
 Valuation of Coral Reef Resources, Guam Coral Reef Initiative, \$45,000  
 Assessment and Modeling of Proposed Dredging of Apra Harbor, Guam, Army Corps of Engineers, \$76,827 4/11-9/12  
 Assessment of coral reef damage from a molasses spill in Honolulu Harbor, 2013-15

### **Courses Taught**

Bi 546 - Graduate Marine Invertebrate Zoology - 4 credit laboratory course, Fall semesters 1986, 88, 90, 92, 94, 96, 98, 00, 02  
 Bi 690 - Cnidarian Histological Techniques (2 credits, Graduate special projects, Spring '86).  
 Bi 691 - Advances in Molecular Evolution (1 credit Graduate seminar, 8 students Spring '87).  
 Bi 590 - Ecology (special projects, 3 credits, 1/3 of course).  
 Bi 520 - Current Topics in Cellular Biology (3 credits, graduate course developed with Drs. Paul and Matson, 5-7 lectures, Fall 1987-01).  
 Bi 505 - Advances in Ecology (3 credits, graduate course developed with Drs. Birkeland and Nelson), Spring 1988, 89, 90, 91, 96, 97, 98, 99, 00, 01, 02).  
 Bi 590 - Marine Surveying Techniques (1 credit, special projects for EPA employees, Spring, 1988).  
 Bi 691 - Graduate Seminar, Developmental Biology and Ecology of Marine Invertebrate Larvae (1 credit, Spring 1993)  
 Coral Population Biology - University of Hawaii Summer Course, Hawaii Inst. of Marine Biology  
 Tropical Marine Biology - Smithsonian Tropical Research Inst. and Univ. of Panama special graduate course for Latin American students  
 Reproduction in Reef Corals. Hawaii Inst. of Marine Biology Summer Graduate Program July, 1997  
 Coral Cultivation and Reef Restoration: A Workshop for the Pacific Islands. June, 1998  
 Assessment and Management of Coral Reefs, University of Guam Graduate Summer Course June, 1999 (team taught); course director for summer 2003  
 Directed Readings in Marine Ecology - Graduate Seminar, Fall 1999  
 Graduate Seminar (Bi 691) Coral Reef Conservation Biology, Fall 2005  
 Graduate Seminar (Bi 691) Marine Ecotoxicology, Fall 2007  
 Coral Reef Taxonomy, Palau International Coral Reef Center, 6/08  
 Tropical Marine Ecology, Univ. of the Ryukyus International Graduate Summer Program, 7/08  
 Graduate Seminar (Bi 691) Coral Reefs: Past, Present and Future, Fall 2008



Graduate Seminar (Bi691) Bridging Science to Policy Development and Implementation, Fall, 2009  
Graduate Seminar (Bi691) Marine Conservation Biology, Fall 2010  
Graduate Seminar (Bi691) Communicating Science, Fall 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021  
Ecology of Palau's Coral Reefs – Stanford University Bing Summer Course, 2013, 2015, 2017, 2019, 2022

#### Additional Lectures

Bi 416 - Cell Physiology  
Bi 225 - Microbiology  
Bi 515 - Geomorphology (Graduate)  
Bi 594 - Physiological Ecology (Graduate)  
Bi 100 - Environmental Biology  
Bi 103 - Marine Biology  
Ev 510 - Environmental Science: Biology/Ecology (Graduate)  
Mi 503 - Micronesian Studies: Contemporary Environmental Issues and Problems  
OEST 735 – Ocean Policy Graduate Seminar, University of Hawaii Richardson School of Law  
OCN 638 – Graduate Oceanography 3 lectures, 1 lab; Fall 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, Spring 2018, 2019, 2021, 2022  
Bi 404 - Senior Marine Biology Seminar, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020  
NREM 601 – College of Tropical Agriculture and Human Resources, 2017, 2018, 2019, 2020  
Marine Biology 454, 10/22 45 students

#### Graduate Students

##### *Advisor/Sponsor/Chair:*

*M.S.:* Ravi Chandran (M.S. 1989), David Hopper (M.S. 1990), Franklyn Te (M.S. 1993), Fernando Rivera (Fulbright Fellow, Ecuador; M.S. 1994), Priscilla Martinez (Fulbright Fellow, Ecuador; M.S. 1994), Yimnang Golbuu (M.S. 1996), Jennifer Coleson, George Roos, Sarah Leota (M.S. 2000), Michelle Banal, Joseph Mancuso, Eric Santiago, Jin Park, Steven Victor (M.S. 2002), Lisa Chau, Victor Bonito (M.S. 2002), Teina Rongo (M.S. 2005), Wendy Chen (M.S. 2004), Lara Franco (M.S. 2007), Laura Damiani (M.S. 2020)

*Ph.D.* Luc Rougee (Ph.D awarded 5/11), Jonathan Martinez (Ph.D. awarded 5/12), Austin Shelton (Ph.D. awarded 12/15), Kaho Tisthammer (Ph.D. awarded 5/17). Sean MacDuff (Ph.D. awarded 8/18), James Murphy (Ph.D. awarded 8/19). Narrissa Spies (Ph.D. awarded 12/21), Alexandria Barkman (Ph.D, 5/23), Present: Keiko Wilkins, Madelief Schelvis, Alexi Meltel, Mackenzie Jahneke.

##### *Committee Member:*

*M.S.:* Shelly Rogers, John Francis, Paul Cerichetti, Jo Nita Quenga Kerr, Alexander Kerr, Heidi Hirsh, Michelle Gaither, Peter Houck, Stephanie Belliveau, Sonjia Hedejsted, Wendy Malcovich, Tosca Lindberg, Rick Seidel, Lev Gestle (2020)

*Ph.D.*: Jean Kenyon (Univ. of Hawaii, 1994), Sandra Romano (Univ. of Hawaii, 1994); Evan Edinger, (outside reader, McMaster University, 1997); David Gulko (Univ. of Hawaii) Ryan Okano (UH Botany, 2010), Brian Nedved (UH Zoology, 2010), Cheryl Squair (UH Botany), Heather Spaulding (UH Zoology, 2010), Craig Downs (Molecular and Cellular Biology; 2008), Kaipo Perez (UH Zoology), Cawa Tran (UH Zoology, 2012), Zack Bergeron (JABSOM, 2014), Lee Shannon (UH Zoology, 2017), Hal Koike (UH Zoology), Eva Schemmel (UH Zoology, 2015), Steffan Oster (UH CMB, 2014), Nicole Yamase (UH Botany), Caitlyn Genovese (UH Biology), Stacy Lewis (Stanford University), Yuko Stender (UH Geography), Rachel Dacks (UH Zoology, 2018), Lelemia Irvine (UH Engineering, 2019) Ron Vave (UH Zoology), Caroline Ferguson (Stanford University), Erika Caball (UH Marine Biology), Leah Shimizu (UH Marine Biology)

### **Undergraduate Students - Research Assistants**

Constantine Apimwar (Chuuk), Doris Leon Guerrero (Guam), Lena Quinata (Guam), Roseanna Yoon (Guam), Senicio Sandei (Palau), Denise Iriarte (Pohnpei), Kennedy Tolano (Kosrae), Emily Stoffel (Palau), Alex Kerr (Canada), Robert Alvarez (Guam), Sarah Torres (Guam), Kayleen Bausoch (Palau), Eric Santiago (Guam), Tanya Taitano (Guam), Steven Victor (Palau), Joleen Aguon (Guam), Morthy Solomon (Pingelap), Jack Idechong (Palau), Vanessa Fread (Yap), Andrew Artero (Guam), Chestwood Nelber (Pohnpei), Aja Reyes (Guam), Noelito Biscocho (Guam) Rebecca Zerzan (Guam), Vincent Duenas (Guam), Lue Dee Kotaro (Palau), Gerda Ucharm (Palau), Houston Lomae (Marshall Islands), Jorg Anson (Pohnpei), Sean McDuff (CNMI). Austin Sheldon (Guam), Brandon Watson (Hawaii), Maile Sanford (Hawaii), Leinson Neth (Pohnpei), James Akana Murphy (Hawaiian), Aliah Irvine (Hawaiian), Aleka Lyman (Hawaiian), Leilua Watson (American Samoa), Aileen Maldonado (Hawaii), Hilario Franco (Hawaii), Tiani Noholowa'a (Hawaiian), Stephanie Diu (Princeton University), Sophia Oberhofer (Austria), Lexi Mentel (Palau), Rubie Gabriel (Palau), Zea Nauta (Guam), Maikani Andres (Palau), MacQuinley Mesengai (Palau), Daysha Adelbai (Palau), Ohialehua Bullock (Hawaii), Lauryn Hansen (Hawaii), Mackenzie Jahneke (Hawaii), Yuji Chibana (Palau), Akili Ligons (Hawaii), Liualevaiosina Chloe Le'iato (American Samoa)

### **Postdoctoral Research Associates**

Dr. Cynthia Hunter (Univ. of Hawaii), Dr. Sandra Romano (Univ. of Hawaii), Dr. Sheila McKenna, (Univ. of Maryland), Dr. Sean MacCafferty (SUNY, Stony Brook), Dr. Veikila Vuki (Univ. of the South Pacific), Dr. Vijayavel Kannappan (India), Dr. Luc Rougee (Univ. of Hawaii), Dr. Yimnang Golbuu (Palau International Coral Reef Center), Dr. Francois Seneca (U. Queensland), Dr. Kaho Tisthammer (Univ. of Hawaii).

## University Service

Director, UOG Marine Laboratory (10/88 - 9/91)

\*Administrator of the Year Award, 1990

\*Meritorious Service Award, 1991

UOG Representative, National Association of Marine Laboratories, 1990-91

Editor, Micronesica (1986-88)

Director, UOG Sea Grant Program (10/88 - 9/91)

Advisor, Marshallese Student Association

Advisor, UOG Aikido Club

Advisor, UOG Student Body Association

Co-Chair, UOG MARC Director search committee

Member, UOG Marine Laboratory search committees (5)

Member, UOG CAS HPERD search committee

Member, UOG Research Council (10/88 - 9/91)

Member, UOG Administrative council (10/88 - 9/91)

Member, UOG Retrenchment reorganization committee

Member, Nakashibetsu Campus committee

Chair, CAS load assignment committee (1987)

Alternate, BOR-GFT negotiating committee (1991)

Adjudication Committee (1991- 95)

UOG Representative, Regional Oil Spill Response Team (1990-91)

Member, Micronesica Editorial Board

Member, Master's Degree in Environmental Science committee

Member, Biology program review committee

Member, Ad Hoc Fisheries Advisory Committee, Dept. of Commerce

Member, Ad Hoc Aquaculture Steering Committee, Dept. of Commerce

Member, Guam Task Force on Algal Poisoning

UOG Representative, U.S and International Coral Reef Initiatives

Interim Director, UOG NIH Minority Biomedical Research Support Prog. (8/96-12/97; 7/01)

Chair, UOG Marine Biologist search committee (1/01- 5/01; 1/02 - 5/02)

Acting Dean, Graduate School and Research (6/01 - 7/01)

Transition team member, University Reorganization, Community Engagement and Outreach (4/03)

Director, UOG NIH Minority Biomedical Research Support Program, 8/02 - 1/04

Chair, Advisory Committee, University of Hawaii/National Institutes of Health MARC/MBRS programs 6/05 - present

Acting Director, Kewalo Marine Laboratory, 9/05 - 3/06

Chair, PBRC Departmental Personnel Committee, 2007

Chair, E.A. Kay Scholarship selection committee, 2007

Member, University of Hawaii at Manoa Tenure and Promotion Committee, 2011

University of Hawaii Faculty Senate, 8/09 - 8/13

Chair, UH Faculty Senate Committee on Research and Graduate Education 8/12 - 8/13

Member, Program Assessment Committee, Graduate Program in Marine Biology 1/14 -

Member, University of Hawaii at Manoa Tenure and Promotion Committee, 2015-16

Member, Biology Graduate Instruction Committee, 10/17 – present  
Member, University of Hawaii Promotion and Tenure Review Committee, 2020  
Chair, Departmental Promotion Committee, Pacific Biosciences Research Center, Fall, 2022

### **Community Service**

Chair, Territorial Aquarium Advisory Committee, Guam  
Member, Guam Visitor's Bureau Tourist Attraction Fund Committee  
Member, Ad Hoc Environmental Review Committee, Guam EPA  
Reviewer, Guam Water Quality Standards, Guam EPA  
Expert Witness\*, People vs. Saylor (coral case, Federal and Territorial)  
Member, Technical Advisory Panel, EPA risk assessment project  
Member and ex officio executive board member, Protehi i Tanota  
Judge, DOE Science Fairs, 1987, 88, 89, 90, 92, 93, 96, 99, 00  
Technical advisor, Dept. Parks and Rec., marine hazards  
Technical advisor, Merizo Municipal Planning Council  
Member, Technical Advisory Committee, Guam Land Use Plan  
Expert Witness\*, Sierra Club Legal Defense Fund (Federal Court)  
Member, Territorial Seashore Protect Plan Committee  
Expert Witness\*, Pohnpei State, FSM, M/V Dang Delima ship grounding  
Member, Legislative Advisory Committee on Environment  
Member, Vision 2000 Tourism and Environmental Committees  
Advisor, Yap Chiefs' Council on ship groundings  
Expert Witness\*, Council of Tomol, Yap State, FSM ship grounding trial  
Member, Guam Land Use Task Force (appointed by Governor)  
Member, Legislative Advisory Committee on Coastal Issues  
Member, Guam Economic Development Authority review panel  
President, M.U. Lujan Elementary School PTO  
Expert Witness\* State of Hawaii, Pila'a Coral Reef Case  
Career Day speaker, Ahuimanu Elementary School 2004, 2005, 2006, 2007  
Career Day speaker, Waianae Intermediate School, 2007  
Expert Witness\*, Native Hawaiian Legal Corporation, coastal water quality case for native fishers  
(\* all services as an expert witness were performed *pro bono*)  
Advisor, Moloka'i Kawela Watershed Restoration  
Advisor, Malama Maunaloa 2009 - present  
Educational Advisor, Polynesian Voyaging Society  
Chair, Maui Coral Reef Recovery Team, 2010-present  
Advisor, Surfrider Foundation, Hawaii Chapter  
Scientific Advisor, Honolulu Harbor Molasses Spill, Fall 2013  
Scientific Advisor, Kauai Coral Disease Response Working Group, 2014  
Science Advisor, Papahanoumokuakea Marine National Monument Expansion Initiative 2016  
Member, Scientific Advisory Committee, Pew Ocean Legacy Program 10/16 – present  
Member, Pacific Remote Islands Coalition, 1/14 - present

## Scientific Presentations

- Richmond, R.H. Geographic Differences in Energetic Allocation to Growth and Reproduction in the coral Pocillopora damicornis. Second Int'l. Symp. on Indo-Pacific Marine Biology, Guam, 1986.
- Richmond, R.H. Selective Mortality of a Dominant Reef-Building Coral. Western Society of Naturalists, Hilo, 1986.
- Richmond, R.H. Clonal Growth in Eastern Pacific Populations of the Coral Pocillopora damicornis. Western Society of Naturalists, Long Beach, 1987.
- Richmond, R.H. Effects of the El Niño Southern Oscillation on the Dispersal of Corals and Other Marine Organisms. Third Int'l Symposium on Marine Biogeography & Evolution in the Pacific, Hong Kong, 1988.
- Richmond, R.H. Competency and Dispersal of Spawned Versus Brooded Coral Planula Larvae. Sixth Int'l. Coral Reef Symposium, Townsville, 1988.
- Richmond, R.H. Relationships Among Reproductive Mode, Biogeographic Distribution Patterns, and Evolution in Scleractinian Reef-Building Corals. Fifth Int'l. Congress of Invertebrate Reproduction, Nagoya, 1989.
- Richmond, R.H., D. Hopper & C. Hunter. Reproduction and Larval Development in the Commercially Valuable Tropical Sea Cucumbers Holothuria (Microthele) nobilis, and Actinopyga mauritiana. Fifth Int'l. Congress of Invertebrate Reproduction, Nagoya, 1989.
- Richmond, R.H. Relationships Between Reproductive Mode and Speciation in Scleractinian Corals. Fourth Intl. Cong. of Systematic and Evolutionary Biology. College Park, MD, 1990.
- Richmond, R.H. Reef Damage from Non-point Source Pollution. 8th Annual Pacific Basin Coastal Zone Management Conference, Guam, 1990.
- Richmond, R.H. Protecting of Coral Reef Resources. National Park Service Conference on Interpreting Critical Issues in Resource Management. Guam, 1990.
- Richmond, R.H. Effects of Runoff and Sedimentation on Coral Reproduction. Fifth International Congress of Ecology. Yokohama, Japan. 1990.
- Richmond, R.H. Effects of Reproductive Mode on the Biogeographical Distribution and Evolution of Corals. Western Society of Naturalist, Santa Barbara, CA, 1991.
- Richmond, R.H., The Effects of Coastal Water Quality on Reproduction in Economically and Culturally Valuable Marine Resources. Invited paper, The Oceans and The Environment: A Pacific Island Perspective, East-West Center, University of Hawaii, April, 1992.
- Richmond, R.H., Fertilization in Corals: Problems and Puzzles. Contributed paper, 7th International Coral Reef Symp., June, 1992.
- Richmond, R.H., The Reproductive Biology of Corals: Comparisons between Okinawa and Guam. Invited paper, International Symposium on Biodiversity and Adaptive Strategies of Coral Reef Organisms, University of the Ryukyus, Okinawa, Japan, November, 1992.
- Richmond, R.H., Coral Reefs: Present Problems and Future Concerns. Invited paper, American Society of Zoologists annual meeting, Vancouver, B.C., Canada, December, 1992.
- Richmond, R.H. The Importance of Reproductive and Larval Characteristics in the Dispersal, Speciation and Conservation of Benthic Marine Invertebrate Species. Invited Plenary talk, 7th Pacific Science Inter-Congress, Okinawa, Japan, June 1993.
- Richmond, R.H. Effects of Coastal Runoff on Coral Reproduction. Global Aspects of Coral Reefs: Health, Hazards and History. University of Miami, RSMAS, June 1993.

- Richmond, R.H., F. Rivera, Y. Golbuu & S. Sandei. Fertilization, Development, Settlement and Metamorphosis in Planula of Mass-Spawning Corals. Larval Ecology Meetings, SUNY at Stony Brook, N.Y. 1993.
- Richmond, R.H. Reproduction and Recruitment of Corals. Invited talk, 5th Marine Aquarium Conference of North America, Toronto, September 1993.
- Richmond, R.H. & F. Rivera. Larval Development, Settlement and Metamorphosis in Several Species of Mass-Spawning Corals. American Society of Zoologists, San Francisco, Dec. 1993.
- Richmond, R.H. Effects of Sea Cucumber fisheries on Marine Biodiversity. Marine/Coastal Biodiversity in the Tropical Island Pacific Region: II. Population, Development and Conservation Priorities. Workshop for PSA Scientific Task Force on Biodiversity and Conservation and Scientific Task Force on Population, Resources and the Environment, Honolulu, Nov., 1994.
- Richmond, R.H., S. Torres, K. Bausoch, Y. Golbuu, H. Wood, and D. Crosby. Effects of Coastal Pollution on Reproduction and Recruitment in Reef-Building Corals. WSN, Monterey, 1994
- Richmond, R.H. Hybridization as an Evolutionary Force in Mass-Spawning Scleractinian Corals. Keystone Symposia: Molecular Approaches to Marine Ecology and Evolution. Santa Fe, 3/95.
- Richmond, R.H. Coastal Resource Management. Pacific Basin Coastal Zone Management Conference, Saipan, May 1995. (Invited).
- Richmond, R.H. Carbon and Corals: Where Does it Go, and How Do We Know? International Conference on Carbon Cycling and Coral Reef Metabolism. Research Inst. for Innovative Technology for the Earth, Kyoto, Japan, November, 1995. (Invited)
- Richmond, R.H., Y. Golbuu and S. Leota. Fertilization, Development and Recruitment Success of Mass-Spawning Corals. American Society of Naturalists, December, 1995.
- Richmond, R.H. Watershed Management and Coral Reefs: Preventing Activities on Land from Becoming Problems in the Sea. 15th Annual Conference, Region IX EPA, June, 1996, Hilo, Hawaii. (Invited)
- Richmond, R.H., Y. Golbuu, S. Leota and K. Bausoch. Coral Reef Monitoring. 15th Annual Conference, Region IX EPA, June, 1996, Hilo, Hawaii. (Invited)
- Richmond, R.H. and Y. Golbuu. Larval Dispersal and Recruitment in Corals: The Long and the Short of It. 8th International Coral Reef Symposium, Panama, June, 1996. (Invited)
- Richmond, R.H. and Y. Golbuu. Reproduction, Larval Development, Recruitment and Early Survivorship in Spawning Corals: Coral Cultivation Applied to Reef Restoration and Ecotoxicology. 8th International Coral Reef Symposium, Panama, June, 1996. (Invited)
- Richmond, R.H. The Effects of Pollution on Reproduction and Recruitment in Corals and Other Benthic Marine Invertebrates. Society for Conservation Biology, Victoria, B.C. June, 1997 (Invited - Organized and Chaired session on Factors Affecting Reproduction and Recruitment)
- Richmond, R.H., S. Leota, J. Coleson and T. Taitano. Coral Cultivation for Reef Restoration, Restitution and the Aquarium Trade. Environmental Protection Agency, 16th Annual Pacific Islands Conference, Pohnpei, FSM. June, 1997 (Invited)
- Richmond, R.H., G. Davis, V. Eflin, R. Sablan, M. Gawel, M. Borja and G. Stillberger. Recommendations for Coral Reef Related Legislation, Including Guidelines for Pacific Island EIA's. Environmental Protection Agency, 16th Annual Pacific Islands Conference, Pohnpei, FSM. June, 1997 (Invited)

- Richmond, R.H., S. Amesbury, P. Callaghan and N. Idechong. Suggestions for the Management of Sea Cucumber Fisheries in Micronesia. VIII Pacific Science Intercongress, Univ. Of the South Pacific, Suva, Fiji. July, 1997
- Richmond, R.H., S. Leota and J. Coleson. Cultivation of Corals for Reef Restoration and the Aquarium Trade. 8th Pacific Science Intercongress, Univ. of the South Pacific, Fiji. July, 1997
- Richmond, R.H. Coral Cultivation and its Application to Reef Restoration and Management: A Collaborative Approach. 15th Annual Pacific Island Coastal Zone Management Conference. Maui, Hawaii 9/97 (invited).
- Richmond, R.H. and S. Leota. The Effects of Pollution on Coral Recruitment. 78th Annual Meeting of the Western Society of Naturalists, Monterey, California December, 1997
- Richmond, R.H., S. Leota and S. Romano. Coral Cultivation for Reef Restoration, Restitution and the Aquarium Trade. Annual Meeting of the Society for Integrative and Comparative Biology. Boston, January, 1998
- Romano, S and R.H. Richmond. Differentiation of Scleractinian Coral Species Using RAPD's. Annual Meeting of the Society for Integrative and Comparative Biology. Boston, Jan., 1998
- Richmond, R.H. Coral Reefs: Health, Biological Indicators and Regulatory Concerns. EPA's National Center for Environmental Research, Washington, D.C., May, 1998.
- Richmond, R.H. Key Issues in Coral Reef Management in the Pacific Islands. U.S. Coral Reef Task Force Meeting, Biscayne National Park, Florida, October, 1998. (invited)
- Richmond, R.H., S. Leota and D. Crosby. The Effects of Coastal Pollution on Reproduction and Recruitment of Tropical Marine Benthic Invertebrates. Annual meeting of the Society for Environmental Toxicology and Chemistry, Charlotte, N.C. November, 1998. (invited)
- Richmond, R.H., S. Leota, S. Romano and S. McKenna. The Use of Coral Planula Larvae as Ecological Indicators of Pollution Effects on Coral Reefs. Annual Meeting of the Society for Integrative and Comparative Biology. Denver, January, 1999
- Richmond, R.H. Cooperative Efforts at Protecting Coral Reef Resources in the Pacific Islands. 16<sup>th</sup> Annual Pacific Basin Coastal Zone Management Conference, Guam. January, 1999.
- Richmond, R.H. Water and Substratum Quality Issues on Coral Reefs. Center for Marine Conservation Workshop on Coral Reefs. Maui, HI. March, 1999 (invited)
- Richmond, R.H. The Effects of Environmental Quality on Reproduction and Recruitment Success of Corals. University of Miami, Rosenstiel School of Marine and Atmospheric Science. April, 1999. (invited)
- Richmond, R.H. S. Romano, Y. Golbuu and S. Leota. The Environmental Biology of Corals and Coral Reefs. U.S. Environmental Protection Agency, Region IX. April, 1999.
- Richmond, R.H. Development of Environmental Assessment, Mitigation and Restoration Techniques for Coral Reefs. U.S. Environmental Protection Agency Ecological Monitoring and Assessment Symposium on Western U.S. Ecological Systems. San Francisco, April, 1999.
- Richmond, R.H., S. Romano and S. Leota. Coral Cultivation and Its Application to Reef Restoration, Environmental Assessment, monitoring and the Aquarium Trade. International Conference on Scientific Aspects of Coral Reef Assessment, Monitoring and Restoration, NCRI, April, 1999.
- Jokiel, P.L., R.H. Richmond and N. Idechong. Economic, Political and Cultural Realities in the Scientific Management of Reef Resources in the Pacific Islands. International Conference on Scientific Aspects of Coral Reef Assessment, Monitoring and Restoration, NCRI, April, 1999.

- McKenna, S.A., R.H. Richmond and G Roos. Assessing the Effects of Sewage on Coral Reefs: Developing Techniques with Predictive Value. International Conference on Scientific Aspects of Coral Reef Assessment, Monitoring and Restoration, NCRI, April, 1999.
- Richmond, R.H. Coral Cultivation and Reef Restoration. Marine Science Institute, University of the Philippines, 25<sup>th</sup> Anniversary. April, 1999 (invited)
- Richmond, R.H. Sea Cucumber Culture and Management Alternatives, Marine Science Institute, University of the Philippines, 25<sup>th</sup> Anniversary. April, 1999 (invited)
- Richmond, R.H. The Coral Reef Initiative: Opportunities for the Pacific Islands. Region IX EPA, Annual Pacific Islands Conference, Saipan. June, 1999 (invited)
- Richmond, R.H. Coral Conservation Biology Applied to Policy Development and Management Initiatives. United Nations Environmental Program/Australian Institute of Marine Sciences Conference on Coral Reef Resources. Townsville, Australia. December, 1999 (invited)
- Richmond, R.H. and S. Leota. The Effects of Anthropogenic Disturbance on Reproduction and Recruitment of Corals. Japan Marine Science and Technology Center and the Japan Science and Technology Agency Intl. Coral Reef Symposium, Tokyo, Japan. February, 2000 (invited)
- Richmond, R.H. The Effects of Land Use Activities on Coastal Marine Communities and Applications of the Clean Water Action Plan. U.S. Dept. of Agriculture, Natural Resources Conservation Service, San Diego, CA. March, 2000 (invited)
- Romano, S.L., J.M. Aguon, and R.H. Richmond. Analysis of genetic variation in Guam populations of the mass spawning coral *Acropora surculosa* using RAPDs. Soc. For Integrative and Comparative Biology, Annual Meeting. January, 2000.
- McKenna, S.A., R. Richmond and G. Roos. Quantifying Sub-lethal Effects of Stress in Corals: Can Growth and Fecundity be used to Detect Stress before Mortality? Soc. For Integrative and Comparative Biology, Annual Meeting. January, 2000.
- Leota, S., K. Bausoch and R. Richmond. The Application of Ecological Indicators to Coral Conservation Biology. 9<sup>th</sup> Pacific Conference on Marine Science and Technology, Hawaii. June, 2000
- Romano, S.L. and R.H. Richmond. Molecular Tools for Assessing Genetic Variation within Scleractinian Coral Species. 9<sup>th</sup> Intl. Coral Reef Symposium, Bali, October, 2000
- Richmond, R.H. Coral Reproduction and Recruitment as Predictive Ecological Indicators of Stress on Reefs. 9<sup>th</sup> Intl. Coral Reef Symposium, Bali, October, 2000
- Leota, S.L., S McKenna and R.H. Richmond. Effects of a Pesticide on Larval Recruitment of the Scleractinian Coral *Goniastrea retiformis*. 9<sup>th</sup> Intl. Coral Reef Symposium, Bali, October, 2000
- Anspacher, G., S. McCafferty, G. Davis and R. Richmond. Community Education: Joining Forces to Preserve Coral Reefs and a Way of Life. 9<sup>th</sup> Intl. Coral Reef Symposium, Bali, October, 2000
- Victor, S. And R. Richmond. The Effect of Reduced Salinity, Copper and Iron on Fertilization Success of Gametes of *Acropora surculosa*. 9<sup>th</sup> Intl. Coral Reef Symposium, Bali, October, 2000
- Richmond, R.H. Coral Reef Conservation Biology. Dept. of Integrative Biology, University of California at Berkeley, April, 2001. (invited)
- Richmond, R.H. Coral Reef Conservation Biology: Science, Management and Policy. 10<sup>th</sup> Pacific Science Intercongress, Guam, June 2001. (invited)
- Richmond, R.H. Reproduction, Recruitment, Regeneration and Resilience of Corals and Coral Reefs. 10<sup>th</sup> Pacific Science Intercongress, Guam, June 2001. (invited)



- Victor, S., and R.H. Richmond. The Effects of Copper on Fertilization of Gametes from a Reef-Building Coral, *Acropora surculosa*. 10<sup>th</sup> Pacific Science Intercongress, Guam, June 2001.
- Richmond, R.H. The Effects of Land-based Activities on Coastal Coral Reefs. 20<sup>th</sup> Annual EPA Pacific Islands Environmental Conference, 6/01. (invited).
- Richmond, R.H. Reproduction, Recruitment, Regeneration and Resilience of Corals and Coral Reefs. Invited Plenary Lecture, 33<sup>rd</sup> Anniversary Conference of the Interuniversity Institute for Marine Sciences, Eilat, Israel, 10/01
- Richmond, R.H. Coral Reef Assessment and Monitoring Programs: Traditional and New Tools. Pacific Regional Coral Reef Assessment and Mapping Workshop, U.S. Coral Reef Task Force. Honolulu, 12/01
- Richmond, R.H. Reproduction, Recruitment, Regeneration and Resilience of Corals and Coral Reefs. Japan Coral Reef Society, Meio University, Okinawa, 3/02 (invited)
- Richmond, R.H. Reproduction, Recruitment, Regeneration and Resilience of Corals and Coral Reefs. University of Hawaii at Hilo, 4/02 (invited)
- Richmond, R.H. The Effects of land-based activities on coastal coral reef ecosystems. Natural Resources Conservation Service regional training program, Guam, 4/02
- Richmond, R.H. Coral Reefs: Key Concerns and Recommendations for National Policy. U.S. Commission on Ocean Policy, Honolulu, 5/02. (invited)
- Richmond, R.H. Coral Reefs At Risk: Solutions to Stress Caused by Coastal Development and Pollution. Capitol Hill Ocean Week, U.S. Congress, Washington, D.C. 6/02 (invited)
- Richmond, R.H. Bio-Criteria for Marine and Water Quality Monitoring for Island Nations. Region IX EPA meetings, Palau, 6/02 (invited)
- Richmond, R.H. Effects of Non-point Source Pollution and Terrestrial Run-Off on Near-Shore Water Quality. Region IX EPA meetings, Palau, 6/02 (invited)
- Richmond, R.H. Coastal Resource Management: The Effects of Poor Land-Use Practices on Coastal Coral Reefs. PACON, Tokyo, Japan, 7/02 (invited/session chair)
- Richmond, R.H. The Application of Science to the Preservation of Coral Reef Ecosystems. U.S. Coral Reef Task Force, Washington, D.C. 2/03 (invited panelist)
- Richmond, R.H. The Effects of Land-based Pollution on Coral Reef Ecosystems. Hawaii Workshop on Coral Reefs and Land-based Pollution. EPA, Honolulu, 3/03 (invited)
- Richmond, R.H. Reproduction, Recruitment, Regeneration and Resilience of Corals and Coral Reefs. Bermuda Biological Station for Research, Bermuda, 4/03
- Richmond, R.H. The Effects of Land-based Pollution on Coral Reef Ecosystems. EPA Conference on Effects of Land-based pollution on Pacific Coral Reefs. Keynote Address, 6/03
- Richmond, R.H. E. Wolanski and M. Hamnett. Integrating Coral Reef Ecosystem Integrity and Restoration Options with Watershed-Based Activities in the Pacific Islands and the Societal Costs of Poor Land-Use Practices. EPA-STAR Environmental Research Seminar, San Francisco, 10/03
- Richmond, R.H. Effects of Anthropogenic Disturbance on Coral Reef Ecosystems: Problems and Solutions. NOAA, National Ocean Service, Coastal Ocean Program Science Seminar, Silver Spring, MD, 11/03
- Richmond, R.H. The Effects of Pollutants on Reproduction, Recruitment and Populations of Corals. Center of Marine Biotechnology, Univ. of Maryland/Johns Hopkins Univ., Baltimore, 11/03

- Richmond, R.H., E. Wolanski, Y. Golbuu, and S. Victor. Factors affecting survival, resilience and recovery of estuarine coral reefs. Ocean Research Conference. Honolulu, Hawaii, 2/04
- Victor, S., Y. Golbuu, E. Wolanski, and R.H. Richmond. Effects of land use change on estuarine coral reefs in Palau. Ocean Research Conference. Honolulu, Hawaii, 2/04.
- CS Sinclair, RH Richmond, and GK Ostrander. Molecular analysis of the telomere regions in scleractinian coral, *Acropora surculosa*. Genomes & Evolution 2004, International Society for Molecular Biology and Evolution, Pennsylvania State University, University Park, PA, 6/04
- Richmond, R.H. Technologies and opportunities to protect coral reef ecosystems in the Pacific. PACON, Honolulu, 6/04 (invited Plenary lecture).
- Richmond, R.H. The effects of pollutants on reproduction, recruitment and populations of corals. 10<sup>th</sup> International Coral Reef Symposium, Okinawa, Japan, 7/04
- Victor, S, Y. Golbuu, E. Wolanski and R. Richmond. Trapping of fine sediment in mangrove-fringed estuaries in Palau. 10<sup>th</sup> International Coral Reef Symposium, Okinawa, Japan 6/04
- Richmond, R.H. Coral reef conservation biology in the Pacific Islands. NSF/UMEB Program. University of Hawaii. 7/04
- Richmond, R.H. Sublethal contaminant assessments on coral reefs. USEPA/NOAA/USGS/DOI Invitational Workshop, "Assessing Pollution Stress on Coral Reefs" Honolulu, 9/04
- Richmond, R.H. Coral Reef Conservation Biology, from Molecules to Management. Zoology Department, University of Hawaii at Manoa, Honolulu. 9/04 (invited)
- Richmond, R.H., G. Ostrander and C. Downs. Biomarkers of pollutant exposure in reef-building corals and their application to coral reef conservation. Fourth World Congress, Society of Environmental Toxicology and Chemistry, Portland, 11/04 (invited)
- Golbuu, Y., S. Victor, and R. Richmond. The Application of Ecotoxicology to the Protection of Tropical Aquatic Ecosystems. Fourth World Congress, Society of Environmental Toxicology and Chemistry, Portland, 11/04 (invited)
- Richmond, R.H. The Effects of Pollutants on Reproduction, Recruitment and Populations of Corals: Dr. Doolittle meets CSI. NOAA, National Marine Sanctuary Program and the UH Marine Option Program, Honolulu, January, 2005.
- Richmond, R.H. and M. Hamnett. When Worlds Collide: The Adventures of a Marine Biologist, a Physical Oceanographer and a Social Scientist on the Coral Reefs of Micronesia. Univ. of Hawaii Faculty Seminar Series, Honolulu, March, 2005.
- Richmond, R and C. Downs. Integrating Watershed Based Activities with Coral Reef Health: New Diagnostic Tools. Ecotoxicology Experts Workshop, World Wildlife Funds for Nature, San Pedro Sula, Honduras, April, 2005 (invited)
- Richmond, R.H. Integrating Coral Reef Ecosystem Integrity with Watershed-based activities in the Tropical Pacific Islands: Advances in Environmental Forensics. Pacific Islands Regional Environmental Conference, Region 9 EPA, Guam, June, 2005 (invited plenary)
- Wolanski E. and R.H. Richmond. Field and model studies of the combined impact of land use and global warming on the health of coral American Society of Limnology and Oceanography, Santiago de Compostela, Spain, 6/05
- Richmond, R.H. Integrating Coral Reef Ecosystem Integrity with Watershed-based activities in the Pacific Islands: Advances in Cellular Diagnostics. University of the Virgin Islands Annual EPSCoR Conference, St. Thomas, 9/05 (invited)

Richmond, R.H., C. Downs and G.K. Ostrander. Identifying and Measuring Sublethal Effects of Multiple Stressors on Corals and Coral Reefs. ASLO Ocean Conference, Honolulu, 2/06

Richmond, R.H. Coral Reef Ecosystem Studies in the western Pacific. NOAA/CSCOR annual review, Honolulu, 3/06

Richmond, R.H. Coral Reef Conservation Biology, a Tale of Three Islands. University of Guam Marine Laboratory, 3/06

Richmond, R.H. The application of the biophysical and social sciences to the conservation of coral reefs: Lessons from the Pacific Islands. NOAA Center for Sponsored Coastal Oceans Research, Silver Springs, MD, 5/06

Richmond, R.H. Y. Golbuu, S. Victor and E. Wolanski. Coral Reef Conservation in the Pacific Islands: Blending Modern Technologies with Traditional Governance. ASLO, Victoria, B.C. 6/06 (invited)

Richmond, R.H. Healthy Oceans, Healthy People: A Pacific Islands Perspective. EcoHealth One, Madison, Wisconsin 10/06 (invited/sponsored by Pew Center for Marine Conservation)

Richmond, R.H. Integrating the Biological, Physical and Social Sciences to Address the Protection of Coastal Marine Resources in Micronesia. Our Sea of Islands, NOAA/UNESCO sponsored workshop. Honolulu, 1/07 (invited).

Richmond, R.H. Watersheds and Coral Reefs: Conservation Science, Policy and Implementation. U.S. EPA National Center for Environmental Research, Washington D.C. 2/07 (invited)

Richmond, R.H. Marine Biotechnology and the Environment: Research, Applications, Mitigation, and Confrontations. Invited Plenary Talk, 8<sup>th</sup> Intl. Biotechnology Conference, Eilat Israel, 3/07

Richmond, R.H. Coral Reef Conservation: Science, Policy and Implementation. Tel Aviv University, 3/07 (invited)

Richmond, R.H. Watershed Impacts on Coastal Coral Reefs. U.S. Army Corps of Engineers, Ft. Shafter, Hawaii. 5/07 (invited)

Richmond, R.H. Watershed Impacts on Coastal Coral Reefs. Malama Maunalua. 5/07 (invited)

Richmond, R.H. Science and Traditional Knowledge: An Arranged Marriage that Works. U.S. Coral Reef Task Force, Pago Pago, American Samoa, 8/07 (invited)

Richmond, R.H. Valuation of Coral Reef Damage: Case Histories from the Pacific Islands. U.S. Coral Reef Task Force, Pago Pago, American Samoa, 8/07 (invited)

Richmond, R.H. Coral Reef Ecosystems in a Changing Climate. U.S. Coral Reef Task Force, Pago Pago, American Samoa, 8/07 (invited Keynote)

Richmond, R.H. The Future of Coral Reef Conservation in a Changing Climate. National Academies of Science, Ocean Studies Board, Washington D.C. 2/08.

Richmond, R.H. Watersheds and Coral Reefs: Conservation Science, Policy and Implementation. Ocean Sciences Meeting, Orlando, Florida 3/2008 (invited session keynote)

Richmond, R.H. Watershed Impacts on Coral Reef Biodiversity in Hawaii and Micronesia. PBRC Symposium on Biodiversity, Honolulu 5/08

Richmond, R.H. The impacts of watershed discharges on the coral reefs of the Pacific Islands. Hawaii Conservation Conference (session chair), Honolulu, 7/08

Richmond, R.H. Bridging Science to Management for the Protection of Coral Reefs. U.S. Coral Reef Task Force. 8/08

Richmond, R.H. The impacts of watershed discharges on the coral reefs of the Pacific Islands. U.S. Coral Reef Task Force, Kona, Hawaii 8/08.

Richmond, R.H. Watersheds and Coral Reefs: Conservation Science, Policy and Implementation. EMECS 8, Shanghai, China 10/08 (invited plenary speaker).

Richmond, R.H. Coral Reef Biodiversity: From Ecosystems to Molecules. Pacific Biosciences Research Center, Honolulu 12/08

Richmond, R.H., and N. Idechong. Coral Reef Ecosystem Studies in Micronesia: Bridging Science to Management, Policy Development and Implementation. NOAA Symposium: Ecosystem Research and Coastal Management: Making the Connection at the Regional Scale, Silver Spring, MD. 5/09

Richmond, R.H. and E. Wolanski. The Future of Coral Reefs: Local Actions Can Buy Time, But Not Prevent Decimation Unless Global Climate Change Is Simultaneously Addressed. Hawaii Conservation Conference, Honolulu HI, 7/09

Richmond, R.H. Coral Reef Biodiversity: From Ecosystems to Molecules and Science to Management, Hollings Marine Laboratory, Charleston S.C. 1/10 (invited)

Richmond, R.H., J. Martinez and E. Wolanski. Multiple Stressors on Coral Reefs: Smoking Guns and Returning Fire. 2010 Ocean Sciences Meeting, Portland 2/10 (invited)

Richmond, R.H. Bridging Science to Marine Conservation in the Pacific: The Good, the Bad and the Ugly. Pew Environmental Group. Washington, D.C. 2/10 (invited)

Richmond, R.H. Marine Biodiversity: The role of Science. Pacific Biosciences Research Center Third Annual Symposium on Biodiversity, Honolulu 5/10

Richmond, R.H. Coral Reefs and Watersheds: Targeting Stressors and Guiding Responses. U.S. Geological Survey, U.C. Santa Cruz, 6/10

Richmond, R.H., and Y. Golbuu. Capacity Development for Marine Conservation in the Pacific Islands, International Marine Conservation Conference, Victoria B.C. 5/11 (invited)

Richmond, R.H. Land-sea connections and their importance to coral reef conservation. University of the Ryukyus, Okinawa, Japan. 8/11 (invited)

Richmond, R.H. The Use of Molecular Biomarkers of Exposure for Coral Reef Management and Conservation. Pew Fellows' meeting, Key Largo FL, 10/11 (invited)

Richmond, R.H. Dr. Doolittle meets CSI on the Reef: Molecular Biomarkers as a Tool for Coral Reef Management and Conservation. NOAA, Silver Spring MD, 10/11 (invited)

Richmond, R.H. Coral Reefs and Climate Change, an Integrated Approach. NOAA workshop on the potential ESA listing of 82 coral species. East-West Center, Honolulu, Hawaii. 6/12 (invited)

Richmond, R.H. Applying Research to Coral Reef Management and Conservation in Palau. A session for the Palau National Congress. 3/12 (invited)

Richmond, R.H. What Every Pacific Island Leader Should Know About Climate Change. Association of Pacific Island Legislatures, Saipan, CNMI. 6/12. (invited)

Martinez, J and Richmond, R.H. Coral physiological stress and recovery from invasive algal overgrowth. 12th International Coral Reef Symposium, Cairns, Australia, 7/12

MacDuff, S. E. Wolanski and R.H. Richmond. Invasive alga removal accelerates sediment flushing in Maunaloa Bay, Hawaii. 12th International Coral Reef Symposium, Cairns, Australia, 7/12

Richmond, R.H., L. Rougee, C. Downs, A. Collier. How corals can tell us what's ailing them. 12th International Coral Reef Symposium, Cairns, Australia, 7/12

Rougee, L., A. Collier, R.H. Richmond. Xenobiotic metabolizing enzymes: tools for coral reef conservation. 12th International Coral Reef Symposium, Cairns, Australia, 7/12

Richmond, R.H. Presidential Address. The Future of Coral Reefs: Don't Worry, Be Happy? 12th International Coral Reef Symposium, Cairns, Australia, 7/12

Richmond, R.H. Coral Reef Conservation: Bridging Science to Policy and Communities in the Pacific Islands. U.C. Santa Barbara, 4/13 (invited)

Richmond, R.H. Coral Reef Conservation Biology: From Molecules to Ecosystems and Dr. Doolittle to CSI. Stanford University, Woods Institute 4/13 (invited)

Richmond, R.H. Coral Reef Conservation: Bridging Science to Policy and Communities in the Pacific Islands. Keynote, Graduate Colloquium, Center for Ocean Solutions, Monterey 4/13

Richmond, R.H. Coral Reefs, Climate Change and Atomic Bombs. Plenary Talk, Ocean Sciences Meeting, Honolulu 2/14.

Richmond, R.H. Climate Change, Coral Reefs and Fisheries in the Pacific Islands. Pacific Islands Forum, Palau 8/14

Richmond, R.H. Impacts of Storm water on Coral Development and Ecology. U.S. Coral Reef Task Force, 10/14 (invited)

Richmond, R.H. Coral Reef Conservation; Past, Present and Future Challenges. NOAA, Silver Spring, 2/15 (invited)

Richmond, R.H. New Molecular Tools to Help Bridge Science, Management and Policy in Conserving Coral Reefs. NOAA, Inouye Center, Honolulu, 7/15 (invited)

Richmond, R.H. Molecular techniques as tools for environmental forensics. Pew Fellows meeting, Fajardo, Puerto Rico, 10/15 (invited)

Richmond, R.H. Coral reefs and climate change, responses to a range of anthropogenic stressors. University of Puerto Rico, 10/15 (invited).

Richmond, R.H. The most extensive coral bleaching event on record: Causes, impacts and responses. U.S. Senate Committee on Energy and Natural Resources 5/16 (invited)

Richmond, R.H. Scientific Support for the expansion of the Papahānaumokuākea Marine National Monument. NOAA Resource Advisory Council. 5/16 (invited).

Richmond, R.H., Tisthammer, K., Seneca, F., Spies, N., and C.A. Downs. Using molecular tools to diagnose and treat the causes of coral reef decline. 13<sup>th</sup> ICRS, Honolulu 6/16

Tisthammer, K. H.; Seneca, F. O.; Richmond, R. H.; Understanding coral's short-term adaptive ability to water pollution using genetics and proteomics. 13<sup>th</sup> ICRS, Honolulu 6/16

Spies, N. P.; Murphy, J. W.; Martinez, J.; Seneca, F. O.; Lyman, A.; Richmond, R. H.; Reef scent: How brooded coral larvae from a tough coral smell their way to a new home. 13<sup>th</sup> ICRS, Honolulu 6/16

Murphy, J. W.; Richmond, R. H.; Bingham, J. P.; Collier, A. C. Analysis of antioxidant enzyme expression over reproductive time points in *Pocillopora damicornis*. 13th ICRS, Honolulu 6/16

Seneca, F. O.; Richmond, R. H. Got biomarkers? Transcriptomics to rescue coral reef health. 13th ICRS, Honolulu 6/16

Macduff, S. D.; Spies, N.; Murphy, J.; Richmond, R. H. A new way of measuring coral health at Laolao Bay, Saipan. 13th ICRS Honolulu, 2016.

Shelton III, A. J.; Richmond, R. H. Building island resilience against climate change through a community-based watershed and coral reef revival initiative. 13th ICRS, Honolulu, 6/16

Richmond, R.H., Coral reef research in Palau, a historical perspective. 1<sup>st</sup> Palau Environmental Symposium, Koror, 8/16 (invited Plenary Talk)

Richmond, R.H. Climate change impacts to coastal communities, an international perspective. Keynote Panel on Climate Change, Blue Ocean Film Festival and Conservation Summit, St. Petersburg, FL, 11/16 (invited Keynote)

Richmond, R.H. The scientific foundation for successful coral reef restoration efforts. NOAA Workshop to Advance the Science and Practice of Coral Restoration, Nova Southeastern University, 11/16 (invited).

Richmond, R.H. The Role of Marine Protected Areas as a response to Global Climate Change and other Anthropogenic Stressors. New Zealand Ministry for the Environment. Wellington, New Zealand 4/17

Richmond, R.H. The future of coral reefs and other marine ecosystems: time to choose. Keynote, Pacific Center for Environmental Studies, 7/17

Richmond, R.H. 30 Years of Insight into the Health and Management of Palau's Coral Reefs. Palau National Congress workshop on the Environment, 7/17

Richmond, R.H. New Tools for Understanding the Effects of Stressors on Coral Reefs. U.S. Coral Reef Task Force Meeting, Ft. Lauderdale, 8/17

Richmond, R.H. The Value of Science in the Courtroom: Climate Change, Fisheries and Coral Reef Health, Pacific Judicial Council Symposium on Science and Environmental Law, Guam, 11/17

Richmond, R.H. The Use of Proteomics to Diagnose and Treat the Root Causes of Coral Reef Decline. Pew Marine Fellows Program Working Group: Applying global research to marine habitat restoration and conservation in Biscayne Bay and Beyond, Miami 6/18

Richmond, R.H. The Future of Coral Reefs: Bridging Science to Policy and Knowledge to Action. Asia-Pacific Coral Reef Symposium, Cebu Philippines, 6/18 (Invited Keynote).

Richmond, R.H. Creating a Sustainable Ocean. Protected area workshop at the 37<sup>th</sup> General Assembly of The Association of Pacific Island Legislatures, Pohnpei, 6/18 (invited keynote)

Richmond, R.H. Engaging Three Branches of Government in Coral Reef Conservation in the Pacific. U.S. Coral Reef Task Force Law Symposium, 8/18

Richmond, R.H. Interventions to Support Coral Reef Persistence and Resilience. U.S. Coral Reef Task Force, Washington D.C. 3/19

Richmond, R.H. Reports from the National Academy of Sciences, Engineering and Medicine Committee on Interventions to Support the Persistence and Resilience of Coral Reefs. U.S. Coral Reef Task Force, Palau. 9/19

Richmond, R.H. Coral Reef Resilience: A Tribute and Legacy. Maui Nui Marine Resource Council, Maui. 11/19

Richmond, R.H. Coral Reef Persistence and Resilience. EarthX Oceans virtual conference. 6/20

Richmond, R.H. Ocean Issues in the Pacific Islands. Task Force Oceania Training. 10/20

Richmond, R.H. Connections Between Environmental Health and Human Health in the Pacific Islands. JABSOM Residents seminar series. 10/20

Richmond, R.H. Congressional Testimony in support of House Bill H.R. 160, Restoring Resilient Reefs Act of 2021. U.S. House of Representatives Committee on Natural Resources, Subcommittee on Water, Oceans, and Wildlife. 5/21

Richmond, R.H. Pesticides and Coral Reefs. Beyond Pesticides Virtual Conference, 6/21

Richmond, R.H., B. Nunn and K.H. Tisthammer. Proteomics as a tool for accurately assessing specific stressor effects on corals and determining the effectiveness of management interventions. 14<sup>th</sup> International Coral Reef Symposium, Bremen, 7/21

- Richmond, R.H. Biological and cultural connections in the Pacific Islands: A cause for optimism in ocean conservation. Ocean Sciences Meeting, 3/22
- Richmond, R.H., K. Tisthammer and B. Nunn. Proteomics as a tool for accurately assessing specific stressor effects on corals and determining the effectiveness of management interventions. 15<sup>th</sup> International Coral Reef Symposium, Bremen, Germany, 7/22
- Richmond, R.H., A. Maldonado, B. Nunn, K. Tisthammer. Survival isn't enough: addressing reproductive capacity of transplanted corals to insure sustainability of restoration activities. Reef Futures, Key Largo, 9/22
- Richmond, R.H. Uptake, trophic transfer and bioaccumulation of radionuclides by marine organisms. Pacific Islands Forum, 2/23
- Richmond, R.H. and Buesseler, K. Concerns regarding the release of treated, radioactively contaminated water from the damaged Fukushima-Daiichi Nuclear Power Plant. Ocean Studies Board, National Academies of Sciences, 9/23
- Richmond, R.H. Achieving Healthier Oceans and People: The Dumping of Nuclear Waste Undercuts Progress. Samuel Lawrence Foundation Symposium on Nuclear Waste, Univ. of California at San Diego, 7/24
- Richmond, R.H. Coral Reefs, Climate Change and Management Interventions. Scripps Institution of Oceanography, U.C. San Diego, 7/24.

## **Professional Reviews**

Associate Editor, Marine Biology 2009 - 2011

Proposal Reviewer: National Science Foundation, National Oceanographic and Atmospheric Administration, Sea Grant, National Marine Fisheries Service, National Geographic Society, Environmental Protection Agency, National Undersea Research Program, US-Israel Binational Agricultural Research and Development Funds, CSIRO - Australia, National Fish and Wildlife Foundation, Hawaii Undersea Research Laboratory, Israel Science Foundation,

Manuscript Reviewer: Marine Ecology Progress Series, Marine Biology, Biological Bulletin, Coral Reefs, Journal of Experimental Marine Biology and Ecology, Paleobiology, Bulletin of Marine Science, Ecology, Invertebrate Biology, 7<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup> International Coral Reef Symposia, American Zoologist, Quarterly Review of Biology, Invertebrate Reproduction and Development, Pew Oceans Commission, Harvard University Press, Hydrobiologia, Frontiers in Ecology and the Environment, Trends in Ecology and Evolution, PLoS One, Molecular and Cellular Proteomics, PeerJ, Scientific Reports, Science, Nature, PNAS.

Promotion and Tenure Reviewer: Outside reviewer for Department of Biological Sciences, SUNY at Buffalo; College of Natural Resources, Environmental Science, Policy and management, University of California at Berkeley, Biology Department, Southern Cross University; Rosenstiel School of Marine and Atmospheric Science, University of Miami; Scripps Institution of Oceanography, UC San Diego; University of Malaysia, James Cook University, Smithsonian Tropical Research Institute.

Program Reviews: University of the Virgin Islands NSF-EPSCOR Program; Global Environmental Facility/World Bank Targeted Coral Reef Research Program, Packard Foundation

Advisor: Goldman Award for Environmental Achievement, The Nature Conservancy, Government of Palau, Government of Yap, Government of Kosrae, Government of the CNMI, Government of Pohnpei, Government of Japan, Research Inst. for Innovative Technology for the Earth (Japan), Save Our Seas (NGO), All Islands Committee US Coral Reef Task Force, Association of Pacific Island Legislators, Aquarium of the Pacific, Marine Conservation Biology Institute, Micronesia Conservation Trust, Pew Ocean Legacy Program, Pew Marine Fellows Program  
External Ph.D. Reviewer; James Cook University (6), Southern Cross University (3), University of Guelph (1), McMaster University (1).

## **Sponsorships**

John Wise, Ph.D. candidate, Smithsonian Institution  
Asher Edwards, Instructor, Community College of Micronesia, FSM  
John Godwin, Ph.D. candidate, University of Hawaii  
Dr. Cynthia Hunter, Post-doctoral researcher  
Dr. David Krupp, U.H. Windward Comm. College  
Dr. Chang-Po Chen, Academia Sinica, Taiwan  
Drs. John and Vicki Pearse (Sabbatical Researchers)  
Mr. F. Crisostomo, Philippines, Asia Foundation Fellow  
Ms. Jean Kenyon, Ph.D. candidate, Univ. of Hawaii  
Mr. Noah Idechong, Chief, Palau Marine Resources Division  
Mr. Spensin James, Academic Vice President, Community College of Micronesia  
Mr. Asher Edwards, Biology Instructor, Community College of Micronesia  
Ms. Carol Emaurois, Director, Palau Community College Science Center  
Dr. Michael Hadfield, Kewalo Marine Lab, Univ. of Hawaii, NIH/MBRS visiting scientist  
Dr. Donald Crosby, Dept. of Envir. Tox., UC Davis, NIH/MBRS, visiting scientist  
Dr. Steve Palumbi, Zoology Dept., Univ. of Hawaii, NIH/MBRS, visiting scientist  
Dr. Sandra Romano, Smithsonian Institution (Post-doc)  
Ms. Laurie Raymundo, Silliman University, Philippines  
Mr. Yuji Arakaki, Meio University, Okinawa, Japan  
Dr. Howard Lasker, SUNY at Buffalo  
Ms. Millie Piazza, Region IX, EPA  
Ms. Tali Yacobovitch, Tel Aviv University  
Mr. Steven Vollmer, Harvard University  
Dr. Karl Brookings, College of Micronesia-FSM  
Dr. Robert Steneck, University of Maine  
Dr. Gary Ostrander, Johns Hopkins University  
Dr. Eric Wolanski, Australian Inst. of Marine Sciences  
Dr. Andrea Grottoli, University of Pennsylvania  
Dr. Tonia Hsieh, Harvard University  
Dr. Colleen Sinclair, Johns Hopkins University  
Ms. Chrissy Huffard, U.C. Berkeley  
Dr. Esti Winters, Tel Aviv University  
Dr. David Julian, University of Florida



Dr. Mike Field, USGS  
Dr. Curt Storlazzi, USGS  
Dr. Jonathan Geller, Cal. State  
Dr. Chris Meyer, Florida State University  
Dr. Nikki Traylor-Knowles, Boston University  
Dr. Isabelle Cote, National Museum of Natural History, Paris, France  
Ms. Chloe Brahmi, National Museum of Natural History, Paris, France  
Ms. Tiani Noholowa'a, Campbell High School  
Ms. Shailin Zhang, Moanalua High School  
Ms. Verena Holzer, University of Bremen, Germany  
Dr. Spencer Nyholm, University of Connecticut  
Ms. Stephanie Diu, Princeton University  
Ms. Sophia Oberhofer, Austria  
Dr. Tsuyoshi Watanabe, Hokaido University, Japan  
Dr. Steve Palumbi, Stanford University  
Dr. Debashish Battacharya, Rutgers University

### **Community Presentations**

SummerSault Camp, USO, 1987  
Rotary Club of Guam, 1988  
Rotary Club of Tumon, 1988  
Rotary Club Japanese Exchange Student Group, 1989  
Marianas Audubon Society, 9/90  
Rotary Club of Tumon, 9/90  
Guam Coastal Zone Management Conference, 8/90  
CCOP/SOPAC meetings, 7/90  
St. John's School, 9/90  
F.B. Leon Guerrero School, 10/90  
George Washington High School, 10/90  
Territorial Aquarium Advisory Committee, Legislative Report, 10/90  
Micronesian Legal Services, Saipan (regional meeting), 11/90  
K-57 Radio, Territorial Aquarium Project, 11/90  
National Association of Marine Laboratories, 11/90  
Yap Coastal Zone Management Conference, 8/90  
George Washington High School, (5 presentations), 12/90  
Guam Recycling Association, 1/91  
Palau Community Education (sponsored by Micronesian Legal Services): Effects of Unregulated Development on the Marine Environment. 5 presentations in 3 days  
MMDC, MOC, Conference on Foreign Investment and Tourism, Palau High School, Palau Womens' Groups, 1/91  
St. John's School, reef walks, 1/91  
Rotary Club of Northern Guam, 1/91  
Finegayan School, 2/91

Marine Laboratory Community Education Series, 2/91; 3/91  
 Price Elementary School, 7/91 (2 presentations)  
 UOG - VIP Program, 7/91  
 GVB Board, Microdredging Project, 7/91  
 University of the Ryukyus, 6/91  
 Cable Forum, 1989, 90, 91  
 National Park Service, 8/91  
 St. John's School, Kids for Corals, 9/91  
 St. John's School, 9-12 social studies, 9/91  
 Windward Community College 1/92  
 Waikiki Aquarium 2/92  
 Atlantis Submarines 2/92  
 Thousand Friends of Hawaii 3/92  
 Surfrider Foundation, Hawaii 5/92  
 AT&T Save Our Reefs Symp., 9/92  
 Gov. of Palau & Nature Conservancy 2/93  
 Palau Community 2/93  
 Rotary Club of Tumon, Keynote speaker 2/93  
 Truman Elem School, career day 4/93  
 JFK High School Symp on Guam's Future 7/93  
 Audubon Society, 9/93  
 Guam Coastal Zone Management Conf., 8/93  
 Rotary Club of Northern Guam, 2/94  
 Truman Elem School, 5/94  
 Micronesia Divers Assn., 5/94  
 So. Finagayen Elem School, 5/94  
 Rotary Club of Guam, 5/94  
 4-H Summer Program, 6/94  
 GVB/Chamber of Commerce Symp., 8/94  
 Project ReefKeeper, 8/94  
 Sierra Club LDF/GreenPeace, 11/94  
 KPRG Public Radio, 3/95  
 Palau Community College, 9/95  
 Yap Chiefs' Council, FSM, 11/95  
 George Washington High School Science Club, 5/95  
 Eco-TaoTao Student Environmental Conference, 4/96  
 Marianas Audubon Society, 4/96  
 Guam Visitor's Bureau Ecotourism Conference, 5/96  
 George Washington High School Science Club, 5/96  
 K-57 Radio Talk Show on Environment, 7/96  
 Rotary Club of Guam, 9/96  
 Price Elementary School, 2nd grade class, 9/96  
 George Washington High School after school program, 9/96  
 Rotary Club of Guam, 3/97

Yap Community, 5/97  
 Guam Reef Check, 5/97; 6/97  
 Guam Coral Reef Advisory Committee, 9/97  
 George Washington High School after school program, 10/97  
 Guam Tropical Dive Station SCUBA Club, 2/98  
 George Washington High School after school program, 2/98  
 South Finagayan Elementary School, 9/98  
 Rotary Club of Guam, 12/98  
 George Washington High School, 5/99  
 Guam Tournament of Champions/Guam Visitors Bureau, 11/99  
 Rotary Club of Guam, 3/2000  
 Kids for Corals student symposium, 9/00  
 Society for Army and Military Engineers, 10/00  
 M.U. Lujan Elementary School, Pre-GATE program, 6/01  
 Micronesia Conservation Society Conference on Business and the Environment, 8/01  
 M.U. Lujan Elementary School, Kindergarten classes on community helpers, 9/01  
 Umatac Municipal Council, Guam, 2/02  
 Ordot/Chalan Pago Elementary School, 3/02  
 Agana Heights Elementary School, 3/02  
 Capitol Hill Ocean's Week, 6/02  
 Guam Legislature, Committee on Environment, 2/03  
 Guam Legislature, Committee on Environment, 4/03  
 Umatac Village Municipal Planning Council, 11/03  
 KHON Television morning show, 3/07  
 Maunalua Community, 5/07  
 Haunama Bay Community Education and Outreach Program, 10/07  
 Malama Maunalua community education program 5/08  
 Maunalua Community Water Quality Training 9/08  
 Malama Maunalua Community monitoring day 9/08  
 Hawaii Kai community council 10/08  
 Malama Maunalua 11/08  
 Hawaii Coastal Ocean Training Program 12/08  
 Kapa'a High School Marine Biology Program 3/09  
 Molokai Community Association 3/09  
 Hawaii Ocean Awareness Training 3/09, 7/09, 10/09, 5/10, 11/10, 5/11, 10/11, 6/12/, 5/13, 4/14  
 Hawaii Community Development Authority 8/09  
 Hawaii Public Radio, 3/10  
 Kamehameha Scholars Program, 3/10  
 Friends of Kewalo, 4/11  
 Sasakawa Peace Foundation, Tokyo, Japan, 8/11  
 Polynesian Voyaging Society training, 12/11  
 Palau National Congress, 3/12  
 Trinity School, 3/13  
 Windward Community College Chemistry Club, 3/13

Surfrider Foundation, 4/13  
Palau Northern Reefs Fisheries Group, 3/15  
Maui Nui Marine Resource Council, 5/15  
ThinkTech Hawaii, 4/16  
Hawaii Public Radio, 5/16  
All Things Ocean radio show, 6/16  
Hawaii Public Radio, 7/16  
San Francisco Public Radio, 9/16  
Chasing Coral panel, Ft. Lauderdale, 8/17  
Chasing Coral panel, Honolulu, 9/17  
Maui Nui Marine Resource Council, Maui 9/18  
Hanauma Bay/Sea Grant Science Series, Honolulu 7/19  
Maui Nui Marine Resource Council, 11/19  
Malama Maunalua, 7/20  
Malama Ai'na, 9/21, 12/21  
Ocean Awareness, 11/22  
Pacific Island's middle school student enrichment program, 7/23  
Science Fridays, Samuel Lawrence Foundation, 10/23  
PANG Pacific Islands NGO, 3/24