**Andrew J. Brooks**

**Curriculum Vitae**

**PERSONAL:**

Address Marine Science Institute

University of California

Santa Barbara, CA 93106

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**RESEARCH INTERESTS:**

Population and community dynamics of marine and estuarine fishes.

**EDUCATION:**

1999 Ph.D. Ecology, Evolution and Marine Biology University of California, Santa Barbara

1993 M.A. Biological Sciences University of California, Santa Barbara

1987 M.Sc./Certificate Aquatic Biology and Fisheries Management University College North Wales, U.K.

1984 B.A. Biology (Marine Emphasis) Occidental College

**RESEARCH AND ACADEMIC POSITIONS:**

2009-Present Project Scientist, Marine Science Institute, University of California, Santa Barbara

1998-2017 Lecturer, Ecology, Evolution and Marine Biology, University of California, Santa Barbara

2007-2010 Lecturer, Three Seas Program, Northeastern University

2007-2009 Associate Project Scientist, Marine Science Institute, University of California, Santa Barbara

1999-2006 Assistant Research Biologist, Marine Science Institute, University of California, Santa Barbara

1998-1999 Teaching Associate, Ecology, Evolution and Marine Biology, University of California, Santa Barbara

1989-1997 Teaching Assistant, Ecology, Evolution and Marine Biology, University of California, Santa Barbara

1988-1991 Instructor, Oceanology Program, Occidental College

1988 Instructor, Physical Oceanography, Los Angeles Valley College

1987-1989 Senior Marine Ecologist, Vantuna Research Group, Occidental College

1984-1986 Marine Ecologist, Vantuna Research Group, Occidental College

**ADMINISTRATIVE POSITIONS:**

2010-Present Education and Public Outreach Coordinator, Moorea Coral Reef Long-Term Ecological Research site

2004-Present Deputy Program Director, Moorea Coral Reef Long-Term Ecological Research site

2001-Present Director, Carpinteria Salt Marsh Reserve, University of California, Santa Barbara

2001-2004 Field Coordinator, Pacific Estuarine Ecosystem Indicators Research Consortium

**PUBLICATIONS:**

***Book Chapters -***

Culver, C.S., **A.J. Brooks** and D. Daft. 2014. Monitoring quagga mussels, *Dreissena bugensis*, in California: How, when and where. Pages 375-400 In W.H. Wong and S.L. Gerstenberger (Ed.) Biology and Management of Invasive Quagga/Zebra Mussels in the Western United States. CRC Press, Boca Raton, FL.

Holbrook, S.J., R.J. Schmitt, **A.J. Brooks**, T. Margalith, J. Burnsed, K. Seydel and H. Masui. 2007. The use of LED light lures to enhance larval settlement of coral reef fish. Pages 326-338 In T. Murata, (Ed.) State of the Art: High Power LED Application Practices, Technical Information Institute Co. Ltd., Japan.

***Refereed Journal Articles –***

Culver, C.S., Ginther, S.C., Daft, D., Johnson, L.T., **Brooks, A.J**. In Press. An integrated pest management tactic for Quagga Mussels: Site-specific application of fish biological control agents. *North American Journal of Fisheries Management*

Burkepile, D. E., Shantz, A. A., Adam, T. C., Munsterman, K. S., Speare, K. E., Ladd, M. C., Rice, M. M., Ezzat, L., McIlroy, S. E., Wong, J. C. Y., Baker, D. M., **Brooks, A. J.,** Schmitt, R. J., Holbrook, S. J. 2020. Nitrogen identity drives differential impacts of nutrients on coral bleaching and mortality. *Ecosystems* 23:798-811

Cinner, J. E., Zamborain-Mason, J., Gurney, G. G., Graham, N. A. J., MacNeil, M. A., Hoey, A. S., Mora, C., Villeger, S., Maire, E., McClanahan, T. R., Maina, J. M., Kittinger, J. N., Hicks, C. C., D'agata, S., Huchery, C., Barnes, M. L., Feary, D. A., Williams, I. D., Kulbicki, M., Vigliola, L., Wantiez, L., Edgar, G. J., Stuart-Smith, R. D., Sandin, S. A., Green, A. L., Berger, M., Friedlander, A. M., Wilson, S. K., Brokovich, E., **Brooks, A. J**., Cruz-Motta, J. J., Booth, D. J., Chabanet, P., Tupper, M., Ferse, S. C. A., Sumaila, U. R., Hardt, M. J., Mouillot, D. 2020. [Meeting fisheries, ecosystem function, and biodiversity goals in a human-dominated world.](http://mcr.lternet.edu/publications/meeting-fisheries-ecosystem-function-biodiversity-goals-human-dominated-world) *Science* 368(6488):307-311

Rassweiler, A., Lauer, M., Lester, S., Holbrook, S. J., Schmitt, R. J., Moussa, R. M., Munsterman, K., Lenihan, H. S., **Brooks, A. J**., Wencelius, J., Claudet, J. 2020. [Perceptions and responses of Pacific Island fishers to changing coral reefs.](http://mcr.lternet.edu/publications/perceptions-responses-pacific-island-fishers-changing-coral-reefs)*Ambio* 49:130-143

Rossi, P., Castagnetti, C., Capra, A., **Brooks, A. J**., Mancini, F. 2020. [Detecting change in coral reef 3D structure using underwater photogrammetry: critical issues and performance metrics.](http://mcr.lternet.edu/publications/detecting-change-coral-reef-3d-structure-using-underwater-photogrammetry-critical) *Applied Geomatics* 12:3-17

Culver, C.S., Ginther, S.C., Daft, D., Johnson, L.T., Brooks, A.J. 2019. An integrated pest management tactic for Quaga Mussels: Site-specific application of fish biological control agents. North American Journal of Fisheries Management

Leray, M., Alldredge, A. L., Yang, J. Y., Meyer, C. P., Holbrook, S. J., Schmitt, R. J., Knowlton, N., **Brooks, A. J.** 2019. [Dietary partitioning promotes the coexistence of planktivorous species on coral reefs.](http://mcr.lternet.edu/publications/dietary-partitioning-promotes-coexistence-planktivorous-species-coral-reefs) *Molecular Ecology* 28(10):2694-2710.

Kamath, A, Pruitt, J. N., **Brooks, A. J.**, Ladd, M. C., Cook, D. T., Gallagher, J. P., Vickers, M. E., Holbrook, S. J., Schmitt, R. J. 2019. [Potential feedback between coral presence and farmerfish collective behavior promotes coral recovery.](http://mcr.lternet.edu/publications/potential-feedback-between-coral-presence-farmerfish-collective-behavior-promotes-coral) *Oikos* 128(4):482-492

Schmitt, R. J., Holbrook, S. J., Davis, S. L., **Brooks, A. J.**, Adam, T. C. 2019. [Experimental support for alternative attractors on coral reefs](http://mcr.lternet.edu/publications/experimental-support-alternative-attractors-coral-reefs). Proceedings of the Natural Academy of Sciences 116(10): 4372-4381

Kayal, M., Lenihan, H. S., **Brooks, A. J**., Holbrook, S. J., Schmitt, R. J., Kendall, B. E. 2018. [Predicting coral community dynamics using multi-species population dynamics models.](http://mcr.lternet.edu/publications/predicting-coral-community-dynamics-using-multi-species-populatiom-dynamics-models) Ecology Letters 21(12):1790-1799

Pruitt, J.N., C.N. Keiser, B.T. Banka, J.S. Leidle, A.J. Brooks, R.J. Schmitt and S.J. Holbrook. 2018. Collective aggressiveness of an ecosystem engineer is associated with coral recovery. Behavioral Ecology 29(6):1216-1224

Dornelas, M., Antao, L., Moyes, F., plus 195 others including **A.J. Brooks**.2018. BioTIME: A database of biodiversity time series for the Anthropocene. *Global Ecology and Biogeography* 27(7):760-768

Cinner, J.E., E. Maire, C. Huchery, M.A. MacNeil, N.A.J. Graham, C. Mora, T.R. McClanahan, M.L. Barnes, J.N. Kittinger, C.C. Hicks, S. D’Agata, A. Hoey, G.G. Gurney, D.A. Feary, I. Williams, M. Kulbicki, L. Vigliola, L. Wantiez, G.J. Edgar, R.D. Stuart-Smith, S.A. Sandin, A. Green, M.J. Hardt, M. Beger, A. Friedlander, S.K. Wilson, E. Brokovich, **A.J. Brooks**, J.J. Cruz-Motta, D.J. Booth, P. Chabanet, C. Gough, M. Tupper, S.C.A. Ferse, U.R. Sumaila, S. Pardede and D. Mouillot. 2018. The gravity of human impacts mediates coral reef conservation gains. Proceedings of the National Academy of Sciences. *Proceedings of the Natural Academy of Sciences* 115(27): E6116-E6125

Holbrook, S.J., T.C. Adam, P.J. Edmunds, R.J. Schmitt, R. Carpenter, **A.J. Brooks**, H.S. Lenihan and C. Briggs. 2018. Recruitment Drives Spatial Variation in Recovery Rates of Resilient Coral Reefs. *Scientific Reports* 8:7338.

Fujii, J., D. McLeish, **A.J. Brooks**, J. Gaskell and K. Van Houtan. 2018. Limb use by foraging marine turtles, an evolutionary perspective. *PeerJ* 6:e4565.

Siu, G., P. Bacchet, G. Bernardi, **A.J. Brooks**, J. Carlot, R. Causse, J. Claudet, E. Clua, E. Delrieu-Trottin, B. Espiau, M. Harmelin-Vivien, P. Keith, D. Lecchini, R. Madi-Moussa, V. Parravicini, S. Planes, C. Ponsonnet, J.E. Randall, P. Sasal, M. Taquet, J.T. Williams and R. Galzin. 2017. Shore fishes of French Polynesia. *Cybium* 41:245-278.

Holbrook, S.J., R.J. Schmitt, T.C. Adam and **A.J. Brooks**. 2016. Coral reef resilience, tipping points and the strength of herbivory. *Scientific Reports* 6:35817.

Han, X., T.C. Adam, R.J. Schmitt, **A.J. Brooks** and S.J. Holbrook. 2016. Response of herbivore functional groups to sequential perturbations in Moorea, French Polynesia. *Coral Reefs* 35:99-1009.

Cinner, J.E., C. Huchery, M.A. MacNeil, N.A.J. Graham, T.R. McClanahan, J. Maina, E. Maire, J. Kittinger, C.C. Hicks, C. Mora, E. Allison, S. D’Agata, A. Hoey, D. Feary, L. Crowder, I. Williams, M. Kulbicki, L. Vigliola, L. Wantiez, G. Edgar, R. Stuart-Smith, S.A. Sandin, A. Green, M. Hardt, M. Beger, A. Friedlander, S.J. Campbell, K.E. Holmes, S.K. Wilson, E. Brokovich, **A.J. Brooks**, J.J. Cruz-Motta, D.J. Booth, P. Chabanet, C. Gough, M. Tupper, S.C.A. Ferse, U. Rashid Sumaila and D. Mouillot. 2016. Bright spots among the world’s coral reefs. *Nature* 535:416-419.

Holbrook, S.J., R.J. Schmitt, V. Messmer, **A.J. Brooks**, M. Srinivasan, P.L. Munday and G.P. Jones. 2015. Reef fishes in biodiversity hotspots are at greatest risk from loss of coral species. *PLoS One* 10:e0124054.

Stier, A.C., K.M. Hanson, S.J. Holbrook, R.J. Schmitt and **A.J. Brooks**. 2014. Predation and landscape characteristics independently affect reef fish community organization. *Ecology* 95:1294-1307.

Adam, T.C., **A.J. Brooks**, S.J. Holbrook, R.J. Schmitt, L. Washburn and G. Bernardi. 2014. How will coral reef fish communities respond to climate-driven disturbances? Insight from landscape-scale perturbations. *Oecologia* 176:285–296.

Stewart, H.L., N.N. Price, S.J. Holbrook, R.J. Schmitt and **A.J. Brooks**. 2013. Determinants of the onset and strength of mutualistic interactions between branching corals and associate crabs. *Marine Ecology Progress Series* 493:155-163.

Page, H.M., **A.J. Brooks**, M. Kulbicki, R. Galzin, R.J. Miller, D. Reed, R.J. Schmitt, S.J. Holbrook and C. Koennigs. 2013. Stable isotopes reveal trophic relationships and diet of consumers in temperate kelp forest and coral reef ecosystems. *Oceanography* 26:180-189.

Leichter, J.J., A.L., Alldredge, G. Bernardi, **A.J. Brooks**, C.A. Carlson, R,C. Carpenter, P.J. Edmunds, M.R. Fewings, K.M. Hanson, J.L. Hench, S.J. Holbrook, C.E. Nelson, R.J. Schmitt, R.J. Toonan, L Washburn and A.S.J. Wyatt. 2013. Biological and physical interactions on a tropical island coral reef: Transport and retention processes on Moorea, French Polynesia. *Oceanography* 26:52-63.

Forsman, Z.H., E. Johnston, **A.J. Brooks**, T. Adam and R.J. Toonen. 2013. Genetic evidence for regional isolation of *Pocillopora* corals from Moorea. *Oceanography* 26:153:155.

Alldredge, A.L., S.J. Holbrook, R.J. Schmitt, **A.J. Brooks** and H. Stewart. 2013. Skeletal growth of four scleractinian corals is not enhanced by in situ mesozooplankton enrichment. *Marine Ecology Progress Series* 489:143-153.

Mora, C., O. Aburto-Oropeza, A.A. Bocos, P.M. Ayotte, S. Banks, A.G. Bauman, M. Beger, S. Bessudo, D.J. Booth, E. Brokovich, **A. Brooks**, P. Chabanet, J. Cinner, J. Cortes, J.J. Cruz-Motta, A.C. Magana, E. DeMartini, G.J. Edgar, D.A. Feary, S.C.A. Ferse, A. Friedlander, K.J. Gaston, C. Gough, N.A.J. Graham, A. Green, H. Guzman, M. Kulbicki, Y. Letourneur, A.L. Perez, M. Loreau, Y. Loya, C. Martinez, I. Mascarenas-Osorio, T. Morove, M.-O. Nadon, Y. Nakamura, G. Paredes, N. Polunin, M.S. Pratchett, H.R. Bonilla, F. Rivera, E. Sala, S. Sandin, G. Soler, R. Stuart-Smith, E. Tessier, D.P. Tittensor, M. Tupper, P. Usseglio, L. Vigliola, L. Wantiez, I. Williams, S.K. Wilson and F.A. Zapata. 2011. Global human footprint on the linkage between biodiversity and ecosystem functioning in reef fishes. *PLoS Biology* 9(4):e1000606.

Messmer, V., G.P. Jones, P.L. Munday, S.J. Holbrook, R.J. Schmitt and **A.J. Brooks**. Habitat biodiversity as a determinant of fish community structure on coral reefs. *Ecology* 92(12):2285-2298.

Lenihan, H.S., S.J. Holbrook, R.J. Schmitt and **A.J. Brooks**. Influence of corallivory, competition and habitat structure on coral community shifts. *Ecology* 92(10):1959-1971.

Johnson, M.K., S.J. Holbrook, R.J. Schmitt and **A.J. Brooks**. Fish communities on staghorn coral: effects of habitat characteristics and resident farmerfishes. *Environmental Biology of Fishes* 91:429-448.

Holbrook, S.J., R.J. Schmitt and **A.J. Brooks**. Indirect effects of species interactions on habitat provisioning. *Oecologia* 166:739-749.

Carr, L.A., K.E. Boyer and **A.J. Brooks**. Spatial patterns of epifaunal communities in San Francisco Bay eelgrass (*Zostra marina*) beds. *Marine Ecology* 32:88-103

Adam, T.C., R.J. Schmitt, S.J. Holbrook, **A.J. Brooks**, P.J. Edmunds, R.C. Carpenter and G. Bernardi. Herbivory, connectivity, and ecosystem resilience: response of a coral reef to a large-scale perturbation. *PLoS One* 6(8):e23717

Schmitt, R.J., S.J. Holbrook, **A.J. Brooks** and J.C.P. Lape. Intraguild predation and competition for enemy-free space: distinguishing multiple predator from competitor effects in a structured habitat. *Ecology* 90:2434-2443

Stier, A.C., M.A. Steele and **A.J. Brooks**. Coral reef fishes use the crown of thorns seastar as habitat. *Coral Reefs* 28:227.

Kane, C.N., **A.J. Brooks**, S.J. Holbrook and R.J. Schmitt. The role of micro-habitat preference and social organization in determining spatial distribution of a coral reef fish. *Environmental Biology of Fishes* 84:1-10.

Holbrook, S.J., Schmitt, R.J. and **A.J. Brooks**. Resistance and resilience of a coral reef fish community to changes in coral cover. *Marine Ecology Progress Series* 371:263-271.

Holbrook, S.J., **A.J. Brooks**, R.J. Schmitt and H.L. Stewart. Effects of sheltering fish on growth of their host corals. *Coral Reefs* 155:521-530.

Lison de Loma, T., CW. Osenberg, J.S. Shima, Y. Chancerelle, N. Davies, **A.J. Brooks** and R. Galzin. A framework for assessing the impacts of marine protected areas in Moorea (French Polynesia). *Pacific Science* 62:431-441.

Hechinger, R.F., K.D. Lafferty, T.C. Huspeni, **A.J. Brooks** and A.M. Kuris. Can parasites be indicators of free-living diversity? Relationships between species richness and the abundance of larval trematodes and of local benthos and fish. *Oecologia* 151(1):82-92.

Stewart, H.L., S.J. Holbrook, R.J. Schmitt and **A.J. Brooks**. Symbiotic crabs maintain coral health by clearing sediments. *Coral Reefs* 25:609-615.

Morgan, S.G., S.A. Spilseth, H.M. Page, **A.J. Brooks** and E.D. Grosholz. Spatial and temporal movement of the lined shore crab *Pachygrapsus* *crassipes* in salt marshes and its utility as an indicator of habitat condition. *Marine Ecology Progress Series* 314:271-281.

Swearer, S. E., G. E. Forrester, M. A. Steele, **A. J. Brooks**, and D. W. Lea. 2003. Spatio-temporal and interspecific variation in otolith trace-elemental fingerprints in a temperate estuarine fish assemblage. *Estuarine, Coastal and Shelf Science* 56:1111-1123.

Holbrook, S.J., **A. J. Brooks** and R. J. Schmitt. 2002. Variation in structural attributes of patch forming corals and in patterns of abundance of associated fishes. *Marine and Freshwater Research* 53(7):1045-1053.

**Brooks, A.J**., R. J. Schmitt and S. J. Holbrook. 2002. Declines in regional fish populations: have different species responded similarly to environmental change? *Marine and Freshwater Research* 53(2):189-198.

Holbrook, S.J., **A. J. Brooks** and R. J. Schmitt. 2002. Are fish assemblages on coral patch reefs predictable? *Marine and Freshwater Research* 53(2):181-188.

Nisbet, R.M., E.B. Muller, **A. J. Brooks** and P. Hosseini. 1997. Models relating individual and population response to contaminants. *Ecological Modeling and Assessment* 2:7-12.

Love, M.S., **A. Brooks** and J.R.R. Ally. 1997. An analysis of the commercial passenger fishing vessel fisheries for kelp and barred sand basses (*Paralabrax clathratus* and *P. nebulifer*) in the Southern California Bight. *California Fish and Game* 82(3):105-121.

Nisbet, R.M., A.H. Ross and **A.J. Brooks**. 1996. Empirically-based dynamic energy budget models: theory and an application to ecotoxicology. *Nonlinear World* 3:85-106.

Love, M.S., **A. Brooks**, D. Busatto, J. Stephens Jr. and P. Gregory. 1996. Aspects of the life histories of the kelp bass and barred sand bass (*Paralabrax clathratus* and *P. nebulifer*) from the Southern California Bight. *Fisheries Bulletin* 94:472-481.

Love, M.S., J. Hyland, A. Ebeling, T. Herrlinger, **A. Brooks** and E. Imamura. 1994. A pilot study of the distribution and abundance of rockfishes in relation to natural environmental factors and an offshore oil and gas production platform off the coast of Southern California. *Bulletin of Marine Science* 55(2&3):1062-1085.

Love, M.S. and **A. Brooks**. 1990. Size and age at first maturity of the California halibut, *Paralichthys californicus*, in the Southern California Bight. In: The California halibut, *Paralichthys californicus*, resource and fisheries. *California Fish and Game* Fish Bulletin #174. Pp. 167-174.

Love, M.S., B. Axell, P. Morris, R. Collins and **A. Brooks**. 1987. Life history and fishery of the California scorpionfish, *Scorpaena guttata*, within the Southern California Bight. *Fisheries Bulletin* 85(1):99-116.

**Brooks, Andrew J.** 1987. Two species of Kyphosidae seen in King Harbor, Redondo Beach, California. *California Fish and Game* 73(1):49-61.

***Published Conference Proceedings –***

Nocerino, E., Neyer, F., Gruen, A., Troyer, M., Menna, F., **Brooks, A**., Capra, A., Castagneti, C., Rossi, P. 2019. [Comparison of diver-operated underwater photogrammetric systems for coral reef monitoring](http://mcr.lternet.edu/publications/comparison-diver-operated-underwater-photogrammetric-systems-coral-reef-monitoring).  *International Society for Photogrammetry and Remote Sensing*. The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences XLII-2-W10, 2-3 May 2019, Limassol, Cyprus. Pp. 143-150

Guo, T., A. Capra, M. Troyer, A. Grun, **A.J. Brooks**, J.L. Hench, R.J. Schmitt, S.J. Holbrook and M. Dubbini. 2016. Accuracy assessment of underwater photogrammetric three-dimensional modelling for coral reefs. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, XXIII.* International Society for Photogrammetry and Remote Sensing Congress, 12-19 July 2016, Prague, Czech Republic, Volume XLI-B5, 2016.

Fountain, T., S. Tilak, P. Shin, S. Holbrook, R.J. Schmitt, **A. Brooks**, L. Washburn and D. Salazar. 2009. Digital Moorea cyberinfrastructure for coral reef monitoring. *Proceedings of 5th International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP) 2009*. Melbourne, Australia. IEEE Conferences Pp. 243-248.

**Brooks, A.J**., S.J. Holbrook and R.J. Schmitt. 2007. Patterns of microhabitat use by fishes in the patch-forming coral Porites rus. *Raffles Bulletin of Zoology Supplement* 14:245-254

Holbrook, S.J, **A.J. Brooks** and R.J. Schmitt. 2006. Relationships between live coral cover and reef fishes: implications for predicting effects of environmental disturbances. *Proceedings of 10th International Coral Reef Symposium*, Okinawa, Japan. June 28-July 2, 2004. Pp. 241-249.

**Brooks, A.J**. 2006. Digital Moorea: The implementation of a wireless sensor network for the monitoring of coral reefs. *Proceedings of the Workshop on the Adoption of Sensor Networks by Coastal Managers*. Townsville, Australia. Pp. 11-16.

**HONORS, AWARDS:**

1997 University Award of Distinction University of California, Santa Barbara

1995-1999 UC TSR&TP Fellowship University of California, Santa Barbara

1994 Continuing Graduate Student Fellowship University of California, Santa Barbara

1886-1987 Rotary Foundation Fellowship for Graduate Study Rotary International

1984 Departmental Honors in Biology Occidental College

1984 Graduated with Distinction in Biology Occidental College

**GRANTS and FELLOWSHIPS:**

2016-2022 US National Science Foundation. LTER: MCR III - Long-term Dynamics of a Coral Reef Ecosystem. University of California, Santa Barbara. Named Investigator.

2012-2016 US National Science Foundation. LTER: MCR IIB - Long-term Dynamics of a Coral Reef Ecosystem. University of California, Santa Barbara. Named Investigator.

2011-2105 US National Science Foundation. Spatial patterns of coral-vermetid interactions: short-term effects and long-term consequences. University of Florida. Named Collaborator.

2011-2013 US Department of Agriculture. Minimizing impacts to urban, agricultural and natural water systems: Evaluating biocontrol agents for invasive Eurasian mussels. Co-PI.

2010-2012 US National Science Foundation. LTER: MCR II - Long-term Dynamics of a Coral Reef Ecosystem. University of California, Santa Barbara. Named Investigator.

2004-2010 US National Science Foundation. LTER: MCR I - Long-term Dynamics of a Coral Reef Ecosystem. University of California, Santa Barbara. Named Investigator.

2002-2005 W. M. Keck Foundation. The Ecotechnology Initiative: Bioengineering Approaches to Restoration Bottlenecks. Associated Investigator.

2002-2005 US Minerals Management Service CMI Project Award. Relative Importance of POCS Oil Platforms on the Regional Population Dynamics of Reef Fishes in the Eastern Santa Barbara Channel. Co-PI.

2001-2005 US Environmental Protection Agency. Western Center for Estuarine Ecosystem Indicator Research: Ecological Indicators. Associated Investigator.

1997-2004 US Minerals Management Service CMI Project Award. Population Trends and Trophic Dynamics in Pacific OCS Ecosystems: What Can Monitoring Data Tell Us? Co-PI.

1997-2004 Crocker Family Foundation. Competition between Two Salt Marsh Fishes with Differing Sources of Recruitment. PI.

1995-1996 UC Natural Reserve System Mildred Mathias Foundation. An investigation into the mechanisms limiting distribution in two co-occurring salt marsh fishes. PI.

**PRESENTATIONS:**

***Invited Lectures and Workshops –***

2020 The use of drone imagery to quantify impacts of 2018 debris flow on the Carpinteria Salt Marsh. Invited Talk. University of California and California State University Drone Camp. Online. June 2020

2020 A Community Conversation – Impacts of the Thomas Fire and January 9, 2018 Debris Flow on the Carpinteria Salt Marsh. Santa Barbara Museum of Natural History. Santa Barbara, CA. January 2020.

2019 Coral versus Macroalgal Dominance on Coral Reefs; Experimental Evidence from Moorea, French Polynesia Suggests That It Could be Both. Invited Webinar. NOAA Coral Reef Conservation Program. December 2019.

2019 The importance of maintaining reef resiliency. Invited Presentation. US AID Sustainable Ecosystems Advanced program. University of California, Santa Barbara, Santa Barbara, CA. March 2019

2019 Photogrammetric applications for ecological studies of coral reefs. Invited lecture. Moorea IDEA Consortium - Symposium on Precise Surveying for Change Detection of Coral Reef 3D structures, Università degli Studi di Modena e Reggio Emilia. Modena, Italy. March 2019

2018 Response of coral reef herbivores to a large-scale reduction in live coral cover. Invited Presentation. Tracking Foundation Species Dynamics from the Mountains to the Ocean in Rapidly Changing LTER Sites Workshop, LTER All Scientists Meeting. Asilomar, CA. October 2018.

2018 The impacts of the Thomas fire and subsequent debris flows on the Carpinteria Salt Marsh. Invited Presentation to Carpinteria Rotary Club, Carpinteria, CA. April,2018.

2018 Application of photogrammetric and 3-D modelling techniques to coral reef ecology. Invited Lecture. Moorea IDEA Consortium Workshop – Techniques in Coral Photogrammetry. Zurich, Switzerland. March 2018.

2018 Maintaining resilience in Coral Reefs: How to keep bad things from happening to good reef. Invited Lecture. Department of Biology, Occidental College, Los Angeles, CA. March 2018.

2016 The fishes of French Polynesia. Invited Talk – Tetiaroa Society, Tetiaroa, F.P. August 2016

2016 Restoring coral reef communities: is there a role for technology? Invited Talk – Tetiaroa Society, Tetiaroa, F.P. August 2016

2016 What do we know about restoring coral reefs? Invited Presentation. Carpinteria Rotary Club, Carpinteria, CA. May 2016.

2015 Resiliency of a coral reef ecosystem. Invited Seminar. Department of Biology, Occidental College, Los Angeles, CA. November, 2015

2015 Resiliency of a coral reef ecosystem. Invited Seminar. Department of Biology, California State University, Channel Islands. Camarillo, CA. March, 2015.

2013 Responses of reef fish communities to large-scale habitat perturbations. Invited Seminar. International Coral and Reef Fish Workshop. Racha Island, Phuket, Thailand. April, 2013.

2012 Local Santa Barbara County Wetlands and Climate Change. Invited Seminar. CA SeaGrant Workshop on Santa Barbara Channel Coastal Ecosystems and Climate Change. Santa Barbara, CA. October, 2012.

2011 Coral reef ecosystems from Darwin to the Beatles: corals get by with a little help from their friends. Invited Seminar. Department of Biology, California State University, Northridge. October, 2011.

2010 Moorea Coral Reef Long-term Ecological Research site: Update on sensor network research activities. Invited Seminar. CREON 6: Coral reef environmental observatory network (CREON) Meeting. Orchid Island, Taiwan, ROC. September, 2010.

2010 Coral reef environmental observatory network (CREON) and the Moorea Coral Reef LTER site. Invited Seminar. Coral reef environmental observatory network (CREON) Meeting. San Diego, CA. March, 2010.

2009 Environmental Sensor Networks on Coral Reefs: Scientific needs and technological challenges. Invited Seminar. Fifth International Conference on Intelligent Sensors, Sensor Networks and Information Processing. Melbourne, Australia. December, 2009.

2008 The benefits of coral residents to their host corals: Examples of marine mutualisms. Invited Seminar. Field Ecology Course, Department of Ecology and Evolutionary Biology, University of California, Santa Cruz. Santa Cruz, CA. October, 2008.

2008 Maximizing the rent: Coral morphology and the benefits of resident fishes to coral growth. Invited Seminar. Department of Ecology and Evolutionary Biology, University of California, Santa Cruz, CA. January, 2008.

2007 The Moorea Coral Reef LTER site. Invited Seminar. University of California Santa Barbara Honors Program in the Biological Sciences. May, 2007.

2007 The use of stable isotopes in the determination of coral reef fish functional diversity. Invited Seminar. Moorea Biocode Project Workshop, University of California Berkeley. March, 2007.

2006 Digital Moorea: The implementation of a wireless sensor network for the monitoring of coral reefs. Invited Seminar. DEST-ISL Workshop on Distributed Sensor Networks, University of Melbourne, Melbourne, Australia. December, 2006.

2006 The need for new enabling technologies for the environmental monitoring of coral reefs. Invited Seminar. DEST-ISL Workshop on Distributed Sensor Networks, University of Melbourne, Melbourne, Australia. December, 2006.

2006 Digital Moorea: The implementation of a wireless sensor network for the monitoring of coral reefs. Invited Seminar. Workshop on the Adoption of Sensor Networks by Coastal Managers, Townsville, Australia. December, 2006.

2006 Restoring coral reef fish communities: the role of ecotechnology. Invited Seminar. Recent Advances in Long-Term Ecological Research in Coral Reefs, Joint Symposium between MCR LTER and Kenting Coral Reef ILTER, National Chung Hsing University, Taiwan, ROC. October, 2006.

2006 Are fish assemblages on coral patch reefs predictable? Invited Seminar. Department of Marine Biology and Aquaculture, James Cook University, Townsville, Australia. March 2006.

2004 Coral reef restoration: The role of ecotechnology. Invited Seminar, Occidental College, Los Angeles, CA. October, 2004.

2004 Digital Moorea: an underwater, wireless network for the environmental monitoring or coral reefs. Invited Seminar. Workshop on Environmental Sensor Networks for Research and Education: Building Capacity in the Lake and Coral Reef Scientific Communities, San Diego, CA. September, 2004.

2003 Population trends and trophic dynamics – what can be learned from long-term monitoring. Invited Seminar. The Nature Conservancy Workshop on the Channel Islands. Santa Barbara, CA. October 2003.

2002 Are coral reef fish communities predictable: the role of coral structure. Invited Seminar. Field Ecology Course, Department of Ecology and Evolutionary Biology, University of California, Santa Cruz. Santa Cruz, CA. September, 2002.

2002 Coral reef restoration: an ecotechnology approach. Invited Presentation to Members of the Gordon and Betty Moore Foundation. Santa Barbara, CA. February 2002.

2001 The influence of coral morphology on coral reef fish communities. Invited Seminar. Gump Research Station Seminar Series, Moorea, French Polynesia. August 2001.

2000 Fisheries management: benefits of partnerships between industry, management, and academia. Invited Seminar. California Department of Fish and Game Annual Retreat, Lake Arrowhead, CA. October 2000

***Other Conference/Meeting Presentations –***

2018 Photogrammetry and 3-D modelling for coral reefs. Moorea Coral Reef LTER Site: Annual All Scientists Meeting. Santa Barbara, CA. November 2018

2017 The impacts of disturbance on a coral reef ecosystem. Moorea Coral Reef LTER Site: Annual All Scientists Meeting. Santa Barbara, CA. December 2017

2016 Recovery trajectories of reef fishes following large-scale disturbances. Annual Meeting of the Western Society of Naturalists. Monterey, CA. November, 2016.

2016 Recovery trajectories of reef fishes following large-scale disturbances. 13th International Coral Reef Symposium. Honolulu, HI. June, 2016.

2014 MCR LTER Time Series Program: Community Dynamics. Moorea Coral Reef LTER Site: Annual All Scientists Meeting. Santa Barbara, CA. December, 2014.

2013 Spatial and ontogenetic variation in the trophodynamics of a coral reef fish community – a stable isotope approach. 9th Indo-Pacific Fish Conference. Okinawa, Japan. June, 2013.

2012 Demography of Three Species of Corals in Moorea. Moorea Coral Reef LTER Site: Annual All Scientists Meeting. Santa Barbara, CA. November, 2012.

2012 Kupe and the Coral – LTER Schoolyard Children’s Book Series. NSF Long Term Ecological Research (LTER) All Scientists Meeting. Estes Park, CO. September, 2012.

2012 Response of coral reef fish communities to large-scale habitat perturbations. NSF Long Term Ecological Research (LTER) All Scientists Meeting. Estes Park, CO. September, 2012

2012 Response of coral reef fish communities to large-scale habitat perturbations. 12th International Coral Reef Symposium. Cairns, Australia. August, 2012.

2011 Coral reefs of the future: will the fish notice? Moorea Coral Reef LTER Site: Annual All Scientists Meeting. Santa Barbara, CA. November, 2011.

2010 Spatial differences in response patterns to disturbance of coral reef fishes in Moorea, French Polynesia. Moorea Coral Reef LTER Site: Annual All Scientists Meeting. Santa Barbara, CA. November, 2010.

2010 Availability of near, real-time physical oceanographic data from Moorea. Moorea Coral Reef LTER Site: Annual All Scientists Meeting. Santa Barbara, CA. November, 2010.

2009 MCR Long-term experimental test-bed for studies on reef resilience. Moorea Coral Reef LTER Site: Annual All Scientists Meeting. Santa Barbara, CA. November, 2009.

2009 Non-linear responses of a coral reef fish community to declines in habitat quality provided by the massive coral Porites rus. 8th Indo-Pacific Fish Conference, Freemantle, Australia. June, 2009.

2008 Maximizing the rent: Coral morphology and the benefits of resident fishes to coral growth. 11th International Coral Reef Symposium, Ft. Lauderdale, FL. July, 2008.

2008 Report on the research activities of the Moorea Coral Reef LTER site. Scientific Roundtable Meeting between the MCR LTER, CRIOBE (Centre de Recherches Insulaires et Observatoire de l'Environnement) and the Richard B. Gump Biological Research Station, Moorea, F. P. April, 2008.

2007 The effects of coral residents on their host corals; integrating effects from microbes to fishes. Moorea Coral Reef LTER Site: Annual All Scientists Meeting. Santa Barbara, CA. November, 2007.

2007 Maximizing the rent: Coral morphology and the benefits of resident fishes to coral growth. 90th Annual Meeting of the Western Society of Naturalists, Ventura, CA. November, 2007.

2007 Moorea Coral Reef LTER: Time series program. Moorea Coral Reef LTER Site Three Year Site Review. Moorea, F.P. July, 2007.

2007 The functional diversity of Mururoa Atoll based on an analysis of stable isotopes. Scientific Roundtable Meeting between the MCR LTER, CRIOBE (Centre de Recherches Insulaires et Observatoire de l'Environnement) and the Richard B. Gump Biological Research Station, Santa Barbara, CA. March, 2007.

2006 Fish-coral interactions: do resident fish alter the relationship between local water flow and coral growth? LTER Network All Scientists Meeting, Estes Park, CO. September, 2006.

2006 Fish-coral interactions: do resident fish alter the relationship between local water flow and coral growth? Ocean Sciences Meeting (AGU/ASLO), Honolulu, HI. February, 2006.

2005 Reef associated fishes, results of MCR LTER Year 1 monitoring efforts. Moorea Coral Reef LTER Site Annual All Scientists Meeting, Santa Barbara, CA. November, 2005.

2005 Microhabitat use, changes in habitat characteristics and variation in the attributes of reef fish communities. 7th Indo-Pacific Fish Conference, Taipei, Taiwan. May, 2005.

2005 Microhabitat use, changes in habitat characteristics and effects on reef fish communities. Scientific Roundtable Meeting between the MCR LTER, CRIOBE (Centre de Recherches Insulaires et Observatoire de l'Environnement) and the Richard B. Gump Biological Research Station, Moorea, F. P. May, 2005.

2004 Fluctuations in coral reef fish community structure are driven by changes in coral reef habitat structure. 87th Annual Meeting of the Western Society of Naturalists, Rhonert Park, CA. November, 2005.

2004 The relationship between changes in habitat characteristics and variation in the attributes of reef fish communities. 10th International Coral Reef Symposium, Okinawa, Japan. June, 2004.

2003 Temporal trends in shallow nearshore and deeper continental shelf fishes since 1977: Do similar responses suggest a common mechanism behind observed declines? Southern California Academy of Sciences, Northridge, CA. May 2003.

2002 Declines in rocky reef fish populations: have different species responded similarly to environmental change? Southern California Academy of Sciences, Claremont, CA. June, 2002.

2002 Predictability of fish assemblages on coral patch reefs. Restoring and Sustaining Diversity of Tropical Pacific Coral Reef Fish Communities, Moorea, F. P.. April, 2002.

2001 Declines in regional fish populations: species responses to environmental change and the nature of community organization. 84th Annual Meeting of the Western Society of Naturalists, Ventura, CA. November, 2001.

2001 The influence of coral morphology on coral reef fish communities. Richard B. Gump Biological Research Station Seminar Series, Moorea, French Polynesia. July, 2001.

2001 Declines in rocky reef fish populations: have different species responded similarly to environmental change. 6th Indo-Pacific Fish Conference, Durban, S.A. March, 2001.

2000 Factors influencing the structure of an estuarine fish community: the role of interspecific competition. American Fisheries Society, Ventura, CA. November, 2000.

2000 Factors influencing estuarine fish community structure: do we need an explicit Southern California model? Society for Ecological Restoration, Santa Barbara, CA. October, 2000.

2000 Population trends and trophic models: the use of long-term datasets. American Society for Ichthyology and Herpetology, La Paz, Mexico. June, 2000.

2000 Population trends and trophic models: the use of long-term datasets. 5th Temperate Reef Symposium, Capetown, S.A. January, 2000.

1999 Factors influencing the structure of an estuarine fish community: the role of interspecific competition. 82nd Annual Meeting of the Western Society of Naturalists, Monterey, CA

1995 Modeling the effects of toxicants: an individual based model approach. Ecological Society of America Annual Meeting. Honolulu, HI. August, 1995.

***Public Presentations –***

2016 Restoring coral reef ecosystems: the role of ecotechnology. Invited Lecture – Carpinteria Rotary Club, Carpinteria, CA. May, 2016.

2013 Coral Reef Ecosystems from Darwin to the Beatles: Corals get by with a little help from their friends. Invited Lecture – UCSB SCUBA Club, Santa Barbara, CA. May, 2013.

2012 Coral Reef Disturbance and Recovery: Lessons from Moorea, French Polynesia. Invited Lecture – UCSB SCUBA Club, Santa Barbara, CA. March, 2012.

2011 Restoring coral reef ecosystems: the role of ecotechnology. Invited Lecture – Paradise Dive Club, Goleta, CA. February, 2011.

2007 The Carpinteria Salt Marsh. Invited Lecture – Carpinteria Rotary Club, Carpinteria, CA. February, 2007.

2005 The Carpinteria Salt Marsh. Invited Lecture – Santa Barbara Garden Club, Santa Barbara, CA. February, 2005.

**COURSES TAUGHT:**

***University of California, Santa Barbara –***

Biology of Fishes 2016

Introduction to Ecology 1999-2005, 2011, 2017

Applied Marine Ecology 2003-2006, 2008-2009

Aquatic Ecology 2004

Aquatic Ecology Lab 2004

SAS Programming for the Life Sciences 2001, 2003

Introduction to Ecology Lab 1998

***Northeastern University***

Biology and Ecology of Fishes 2007-2010

***Occidental College***

Oceanology 1988-1991

***Los Angeles Valley College***

Physical Oceanography 1988

**GRADUATE STUDENT ADVISING:**

***University of California, Santa Barbara –***

2013 Shirley Han, Ph.D. in Ecology, Evolution and Marine Biology Committee Member

2013 Jessica Nielsen M.A. in Ecology, Evolution and Marine Biology Committee Member

2010 Michelle Kissinger M.A. in Ecology, Evolution and Marine Biology Committee Member

2006 Cori Kane M.A. in Ecology, Evolution and Marine Biology Committee Member

2005 Jennifer Lape M.A. in Ecology, Evolution and Marine Biology Committee Member

***University of California, Santa Cruz –***

2009 Amanda Jensen M.A. in Ecology and Evolutionary Biology Committee Member

***California State University, Northridge –***

2016 Barbara Weiser M.S. in Biology Committee Member

2013 Jesse Tootell M.S. in Biology Committee Member

2012 Jennifer Gowan M.S. in Biology Committee Member

***San Francisco State University –***

2008 Lindsay Carr M.S. in Biology Committee Member

***Northeastern University –***

2009 Katie Fields M.S. in Biology Committee Chair

2008 Edith Carson M.S. in Biology Committee Chair

2008 Becky Focht M.S. in Biology Committee Chair

***James Cook University, Townsville, Australia –***

2016 Davina Poulos Ph.D. in Marine and Environmental Science External Examiner

2008 David Feary Ph.D. in Marine and Environmental Science External Examiner

**UNDERGRADUATE STUDENT ADVISING:**

***University of California, Santa Barbara –***

2011 Samuel Ginther Senior Thesis in Ecology, Evolution and Marine Biology Co-Chair

2008 Jennifer Gowan Senior Thesis in Ecology, Evolution and Marine Biology Member

2004 Shannon Harrer Senior Thesis in Ecology, Evolution and Marine Biology Chair

2003 Cristina Smoot Senior Thesis in Ecology, Evolution and Marine Biology Chair

1996 Chris Caldow Senior Thesis in Ecology, Evolution and Marine Biology Chair

***University of East Anglia, Norwich, England, U.K. –***

2005 Emily Howgate Senior Thesis in Biological Sciences (EAP) Chair

**UNIVERSITY SERVICE:**

2007-Present Member, University of California, Santa Barbara Diving Control Board

2007-Present Member, University of California, Santa Barbara Small Boat Safety Committee

1996-1997 Vice President for Internal Affairs, University of California, Santa Barbara Graduate Student Association

1993-1996 Departmental Representative, University of California, Santa Barbara Graduate Student Association

**PROFESSIONAL SERVICE:**

***Journal Editorial Staff for:***

2019-Present Assistant Editor for Diversity

2015-Present Assistant Editor for Coral Reef Ecology, Frontiers in Marine Science

***Journal Reviewer for:***

1999-Present Ecology, Oecologia, Coral Reefs, Journal of Marine and Freshwater Research, Environmental Biology of Fishes, Estuaries, Biological Invasions, Marine and Freshwater Behavior and Physiology, Scientific Reports, Diversity

***Grant Reviewer for:***

1990-1991 National Underwater Research Program

***Professional Societies:***

2007-Present Treasurer, Western Society of Naturalists

2000-2002 Secretariat, Western Society of Naturalists

***Other:***

2009-Present Member, Coral Reef Environmental Observing Network (CREON)

2005-2008 Member, Steering Committee, Moorea Marine Protected Areas (PGEM) Consortium

2003-2006 Member, Scientific Advisory Board, Malibu Lagoon Restoration program, Heal the Bay

2001 Consultant, S.A.I.C., Santa Barbara Airport Runway Extension Project

1999-2000 Scientific Advisory Board, San Francisco Airport Expansion Project

**REFERENCES:**

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