

### Education

- Ph.D., Biological Oceanography, 1998, University of Rhode Island.
- M.S., Biological Oceanography, 1993, University of Rhode Island.  
*Office of Naval Research Fellow, 1991-1993*
- Summer program, Earth System Science, 1991, USRA / NASA GSFC.
- Summer course, Biological Oceanography, 1990, Bermuda Biological Station.
- B.S., Biological Sciences, 1988, University of Massachusetts, *summa cum laude*.

### Appointments

- Senior Research Specialist, Monterey Bay Aquarium Research Institute, 2009-
- Research Scientist, Monterey Bay Aquarium Research Institute, 2001 to 2008
- Post Doctoral Fellow, Monterey Bay Aquarium Research Institute, 1998-2001

### Publications

#### ***Coastal Oceanography***

- Jessup, DA, MA Miller, JP Ryan, HM Nevins, HA Kerkering, A Mekebri, DB Crane, TA Johnson, RM Kudela, Mass Stranding of Marine Birds Caused by a Surfactant-Producing Red Tide, *PLoS ONE*, in press.
- Ryan, JP, AM Fischer, RM Kudela, JFR Gower, SA King, R Marin III, FP Chavez. 2008b. Influences of upwelling and downwelling winds on red tide bloom dynamics in Monterey Bay, California, *Continental Shelf Research*, in press.
- Ryan, JP, JFR Gower, SA King, WP Bissett, AM Fischer, RM Kudela, Z Kolber, F Mazzillo, EV Rienecker, FP Chavez. 2008a. A coastal ocean extreme bloom incubator. *Geophysical Research Letters*, 35, L12602, doi:10.1029/2008GL034081.
- Ryan, JP, MA McManus, JD Paduan, and FP Chavez. 2008c. Phytoplankton thin layers within coastal upwelling system fronts. *Marine Ecology Progress Series*, 354:21-34.
- Kudela, RM, JP Ryan, MD Blakely, JQ Lane1, TD Peterson. 2008. Linking the physiology and ecology of *Cochlodinium* to better understand harmful algal bloom events: a comparative approach. *Harmful Algae*, 7:278-292.
- Rienecker, ER, JP Ryan, R Marin, M Blum, C Dietz, FP Chavez. 2008. Synoptic mapping of the phytoplankton size distribution, with applications to the ecology of red tides and harmful algal blooms. *Limnology and Oceanography: Methods*, 6:153-161.
- McGann C., F. Py K. Rajan, J. Ryan, R. Henthorn. 2008. Adaptive Control for Autonomous Underwater Vehicles. In AAI 23<sup>rd</sup> Conference on Artificial Intelligence, Integrated Intelligence Special Track, Chicago, July 13-17, 2008.
- Fox, M, D Long, F Py, K Rajan, J Ryan. 2007. In situ analysis for intelligent control. Proceedings of IEEE/OES OCEANS Conference. 2007, ISBN:1-4244-0635-8, Aberdeen, Scotland.
- Bird, LE, AD Sherman, JP Ryan. 2007. Development of an Active, Large Volume, Discrete Seawater Sampler for Autonomous Underwater Vehicles, Proceedings of the Oceans MTS/IEEE Conference, Vancouver, Canada.
- Dierssen, HM, RM Kudela, JP Ryan, and RC Zimmerman. 2006. Red and black tides: Quantitative analysis of water-leaving radiance and perceived color for phytoplankton, colored dissolved organic matter, and suspended sediments. *Limnology and Oceanography*, 51(6): 2646-2659.
- Ryan, JP, HM Dierssen, RM Kudela, CA Scholin, KS Johnson, JM Sullivan, AM Fischer, EV Rienecker, PR McEnaney and FP Chavez. 2005a. Coastal ocean physics and red tides, an example from Monterey Bay, California. *Oceanography*, 18:246-255.

- Ryan, JP, FP Chavez, and JG Bellingham. 2005b. Physical-biological coupling in Monterey Bay, California: topographic influences on phytoplankton ecology. *Marine Ecology Progress Series*, 287:23-32.
- Fitzwater, SE, KS Johnson, VA Elrod, JP Ryan, LJ Coletti, SJ Tanner, RM Gordon, FP Chavez. 2003. Iron, nutrient and phytoplankton biomass relationships in upwelled waters of the California coastal system, *Continental Shelf Research*, 23:1523-1544.
- Chavez, FP, JT Pennington, CG Castro, JP Ryan, RP Michisaki, B Schlining, P Walz, KR Buck, A McFadyen and CA Collins. 2002. Biological and chemical consequences of the 1997-98 El Niño in central California waters. *Progress in Oceanography*, 54:205-232.
- Ryan, JP, JA Yoder, and DW Townsend. 2001. Influence of a Gulf Stream warm-core ring on water mass and chlorophyll distributions along the southern flank of Georges Bank. *Deep-Sea Research II*, 48:159-178.
- Ryan, JP, JA Yoder, PC Cornillon, and JA Barth. 1999. Chlorophyll enhancement and mixing associated with meanders of the shelfbreak front in the Mid-Atlantic Bight. *Journal of Geophysical Research*, 104:23,479-23,493.
- Ryan, JP, JA Yoder, and PC Cornillon. 1999. Enhanced chlorophyll at the shelfbreak of the Mid-Atlantic Bight and Georges Bank during the spring transition. *Limnology and Oceanography*, 44:1-11.
- Ryan, JP and JA Yoder. 1996. Long-term mean and event-related pigment distributions during the unstratified period in South Atlantic Bight outer margin and middle shelf waters. *Continental Shelf Research*, 16:1165-1183.

### **Large-Scale Oceanography**

- Ryan, JP, I Ueki, Y Chao, H Zhang, P Polito, and FP Chavez. 2006. Western Pacific modulation of large phytoplankton blooms in the central and eastern equatorial Pacific. *Journal of Geophysical Research, Biogeosciences*, 111, GO2013, doi:10.1029/2005JG000084.
- Carr, M-E, and 37 others. 2006. A comparison of global estimates of marine primary production from ocean color. *Deep-Sea Research II*, 53:741-770.
- Sakamoto, C., et al., 2004. Influence of Rossby waves on nutrient dynamics and the plankton community structure in the North Pacific subtropical gyre. *Journal of Geophysical Research*, 109, C05032.
- Chavez, FP, J Ryan, SE Lluch-Cota and M Niquen. 2003. From anchovies to sardines and back: multidecadal change in the Pacific Ocean, *Science* 299(5604):217-221.
- Ryan, JP, PS Polito, PG Strutton and FP Chavez. 2002. Unusual Large-scale blooms in the equatorial Pacific. *Progress in Oceanography*, 55:263-285.
- Campbell, J., and 22 others. 2002. Comparison of algorithms for estimating ocean primary production from surface chlorophyll, temperature, and irradiance. *Global biogeochemical cycles*, 16(3), 10.1029/2001GB001444.
- Polito, P. S., J. P. Ryan, W. T. Liu and F. P. Chavez. 2001. Oceanic and atmospheric anomalies of tropical instability waves, *Geophysical Research Letters*, 28(11):2233-2236.
- Strutton, P. G., J. P. Ryan and F. P. Chavez. 2001. Enhanced chlorophyll associated with tropical instability waves in the equatorial Pacific. *Geophysical Research Letters*, 28:2005-2008.
- McGillicuddy, D. J., V. K. Kosnyrev, J. P. Ryan, and J. A. Yoder. 2001. Covariation of mesoscale ocean color and sea surface temperature patterns in the Sargasso Sea. *Deep-Sea Research II*, 48:1823-1836.
- Goyet, C, RJ Healy, and JP Ryan. 2000. Global distribution of total inorganic carbon and total alkalinity below the deepest winter mixed layer depths. ORNL/CDIAC-127, NDP-076. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S.

Department of Energy, Oak Ridge, Tennessee, 40 pp. Online:  
[http://cdiac.esd.ornl.gov/oceans/ndp\\_076/ndp076.html](http://cdiac.esd.ornl.gov/oceans/ndp_076/ndp076.html).

### Presentations

#### *Invited talks*

- ◆ 2008 CalCOFI Meeting, UCSD
- ◆ 2008 PISCO Coastal Physical Oceanography and Marine Ecosystems Course, UCSC
- ◆ 2007 PISCO Symposium, Oregon State University
- ◆ 2007 Oceanography Seminar Series, Moss Landing Marine Laboratories
- ◆ 2007 Coastal Remote Sensing Workshop, UCSC
- ◆ 2007 Remote Sensing Course, Naval Postgraduate School, Monterey
- ◆ 2007 Oceanography Seminar Series, Naval Postgraduate School, Monterey
- ◆ 2007 Marine Sciences Seminar Series, UCSC
- ◆ 2007 Spring Seminar Series, UC Davis, Bodega Marine Laboratory
- ◆ 2007 Spring Environmental Marine Biology seminar series, USC
- ◆ 2006 PISCO Coastal Physical Oceanography and Marine Ecosystems Course, UCSC
- ◆ 2005 Eastern Pacific Ocean Conference, South Lake Tahoe
- ◆ 2005 AGU Fall Meeting, San Francisco
- ◆ 2005 Biogeochemistry Seminar Series, Oregon State University
- ◆ 2005 AVIRIS Workshop, Pasadena
- ◆ 2004 Seminar Series, Museum of Natural History, Morro Bay
- ◆ 2002 Seminar Series, NASA Jet Propulsion Laboratory
- ◆ 2002 UCSC Marine Sciences Seminar Series
- ◆ 2000 AGU / Ocean Sciences Meeting, San Antonio

#### ***Other Presentations at Professional Meetings***

Only first-\* and second-\*\* author presentations are noted.

- ◆ 2008 Eastern Pacific Ocean Conference\*, (Harmful Algal Bloom session co-chair) *A red tide incubator in the California Current System*
- ◆ 2008 Eastern Boundary Upwelling Ecosystems Meeting\*, *Intermediate Nepheloid Layers in the Central California Coastal Zone*
- ◆ 2008 Eastern Boundary Upwelling Ecosystems Meeting\*\*, *Intermediate Nepheloid Layers in the Central California Coastal Zone*
- ◆ 2008 Ocean Sciences Meeting\*, *Scales and processes of phytoplankton thin layer patchiness in Monterey Bay, from synoptic multidisciplinary mapping by an AUV*
- ◆ 2008 Ocean Sciences Meeting\*\*, *Automated characterization of layered structure using wavelets*
- ◆ 2008 Ocean Sciences Meeting\*\*, *Remote sensing detection of red tides in a coastal upwelling system embayment*
- ◆ 2007 Eastern Pacific Ocean Conference\*, *Mesoscale dynamics influencing incubation, spread and retention of red tide in Monterey Bay*
- ◆ 2007 Eastern Pacific Ocean Conference\*\*, *AUV mapping of particle size spectra in intermediate nepheloid layers*
- ◆ 2007 Eastern Pacific Ocean Conference\*\*, *Boundary layer intrusions from the outer shelf: Intermediate Nepheloid Layers around Monterey Bay*
- ◆ 2007 Eastern Pacific Ocean Conference\*\*, *Tidally-forced exchange between Elkhorn Slough and Monterey Bay*
- ◆ 2007 Synthetic Aperture Radar Workshop\*, *SAR in multidisciplinary studies of Monterey Bay*

- ◆ 2006 12th International Conference on Harmful Algae\*: *A red tide incubator in the upwelling shadow of Monterey Bay*
- ◆ 2006 UNOLS Scientific Committee for Oceanographic Aircraft Research\*: *Airborne remote sensing of Monterey Bay*
- ◆ 2006 AUV Science Users Meeting\*\*: *AUVs as elements of Ocean Observing Systems*
- ◆ 2006 Ocean Sciences Meeting\*, *Western Pacific modulation of large-scale blooms in the central and eastern equatorial Pacific*
- ◆ 2006 Ocean Sciences Meeting\*\*, *Synoptic mapping of the phytoplankton size spectrum*
- ◆ 2006 Ocean Sciences Meeting\*\*, *Land-sea interactions in Monterey Bay*
- ◆ 2005 NASA Ocean Color Research Team Meeting\*: *Coastal ocean physics and red tides*
- ◆ 2005 Sanctuary Currents Symposium\*\*: *The Elkhorn Slough Plume*
- ◆ 2004 InSAR Workshop\*: *Birth of a Red Tide Bloom*
- ◆ 2004 First Symposium of the Earth System Scholars Network\*: *Merging NASA remote sensing with a coastal ocean observatory for research across scales, from climate variability to small-scale processes*
- ◆ 2004 ASLO/TOS Ocean Research Conference\*\*: *Hyperspectral signatures and remote sensing of a red tide event in Monterey Bay using AVIRIS and PHILLS2 airborne imagery*
- ◆ 2004 ASLO/TOS Ocean Research Conference\*\*: *Operational AUV observations in Monterey Bay*
- ◆ 2004 AVIRIS Workshop\*\*: *Oceanographic studies using AVIRIS in Monterey Bay, California*
- ◆ 2003 Eastern Pacific Ocean Conference\*: *Prelude to a Red-Tide Bloom*
- ◆ 2003 Eastern Pacific Ocean Conference\*\*: *Applications of particle size measurements in Monterey Bay*
- ◆ 2003 AVIRIS Workshop\*: *Environmental processes in Monterey Bay, California*
- ◆ 2002 Ocean Sciences\*: *Technology and Science of the MBARI Ocean Observing System*
- ◆ 2002 Ocean Sciences\*\*: *Processes underlying seasonal chlorophyll variability in the tropical Pacific*
- ◆ 2002 AVIRIS Workshop\*: *Environmental processes in the Monterey Bay National Marine Sanctuary: Studies integrating AVIRIS and synoptic in situ sensing*
- ◆ 2001 Eastern Pacific Ocean Conference\*: *Ecosystem process studies in Monterey Bay*
- ◆ 2001 Spring AGU Meeting\*: *Unusual large-scale phytoplankton blooms in the equatorial Pacific*
- ◆ 2001 NASA Ocean Color Research Team Meeting\* *Remote sensing and modeling of physical-biological coupling in the eastern tropical Pacific*

### Grants

- NASA Oceanography Program, 2001-2004
- NASA New Investigator Program, 2003-2005
- ONR Layered Organization of the Coastal Ocean Program, 2004-2008

### Professional Activities

- Member of AAAS, AGU, ASLO, NASA Earth System Scholars Network
- Invited Panel Reviewer for *The Nature Conservancy* Marine Eco-regional Assessment for northern California
- Invited Science Team member, NASA Earth System Science Pathfinder Program
- Panel reviewer for NASA Oceanography and New Investigator Programs

- Reviewer for Nature, Geophysical Research Letters, G<sup>3</sup>, Deep Sea Research, Limnology and Oceanography, Marine Ecology Progress Series, Continental Shelf Research, Journal of Oceanography, IEEE Journal of Oceanic Engineering, NASA SIMBIOS program, and NSF

### **Education, Teaching & Mentoring**

- ❖ Teacher, California State Summer School in Mathematics and Science: 2000 & 2001
- ❖ Teacher, Monterey County Lyceum Program: 2002-2004
- ❖ Mentor, MBARI Summer Intern Program: 1999, 2002, 2003, 2005, 2006, 2007
- ❖ Collaborator on development of *Phytopia* Upwelling Systems educational module
- ❖ Mentor and thesis committee member for A. Vander Woude (UCSC), L. Sassoubre (MLML), and D. Carroll (MLML); mentor for J. Lee (UCLA)