

## Biographical Sketch

PIERRE FLAMENT

### (a) Professional Preparation:

B.Sc. in Engineering Physics, Université Libre de Bruxelles (1972).

M.Sc. in Theoretical Physics, Université Libre de Bruxelles (1980).

Ph.D. in Physical Oceanography, University of California San Diego (1986).

### (b) Appointments:

1988-present: assistant, associate and professor, Department of Oceanography, University of Hawai'i at Manoa.

2007-present: adjunct professor, Marine Science Institute, University of the Philippines Diliman

2004-2006: IPA program director in the Physical Oceanography Program, National Science Foundation.

1997-2002: senior scientist and director, Département d'Océanographie Spatiale, Institut Français de Recherche pour l'Exploitation de la Mer.

1987-1988: post-doctoral fellow, Department of Physical Oceanography, Woods Hole Oceanographic Institution.

1982-1986: research assistant, Ocean Research Division, Scripps Institution of Oceanography.

1983: summer fellow, Geophysical Fluid Dynamics program, Woods Hole Oceanographic Institution.

1981: fellow, Belgian American Educational Foundation and David and Alice Van Buuren Foundation.

1980: visiting researcher, Laboratoire de Geomagnétisme, Ecole Normale Supérieure, Paris.

### (c) Products:

Most closely related to HF radars:

Kirincich, A., B. Emery, L. Wahsburn and P. Flament, "Improving Surface Current Resolution Using Direction Finding Algorithms for Multiantenna High-Frequency Radars", *J. Atm. Ocean. Tech.*, v.36 pp. 1997-2014, 2019, DOI 10.1175/JTECH-D-19-0029.1.

Repollo C., X. Flores, C. Chavanne, C. Villanoy and P. Flament, "Low-frequency Surface Currents and Generation of Island Lee Eddy in Panay Island, Philippines", *J. Phys. Ocean.*, v. 49 pp. 765-787, 2019 (SOEST contrib. 10631). DOI: 10.1175/JPO-D-17-0191.1

Castillo-Trujillo A.C., D. Partridge, B. Powell and P. Flament, "Vorticity Balance off the South Shore of Oahu, Hawaii, Derived by High-Frequency Radio Doppler Current Observations", *J. Phys. Ocean.*, v. 49 pp. 211-225, 2019, DOI 10.1175/JPO-D-17-0270.1

Benjamin, L. R., P. Flament, K. F. Cheung, and D. S. Luther, "The 2011 Tohoku tsunami south of Oahu: High-frequency Doppler radio observations and model simulations of currents", *J. Geophys. Res.*, 121:10.1002/2015JC011207, 2016.

Flores-Vidal, X., R. Durazo, L. Zavala Sanson, P. Flament, C. Chavanne, F.J. Ocampo-Torres and C. Reyes, "Evidence of inertially generated coastal-trapped waves in the eastern tropical Pacific", *J. Geophys. Res.*, 119:10.1002/2013JC009118, 2014.

Flores-Vidal, X., P. Flament, R. Durazo, C. Chavanne and K-W. Gurgel, "High Frequency Radars: Beam forming calibrations using ships as reflectors", *J. Atm. Ocean. Tech.*, v.30 pp. 638-648, 2013.

Chavanne, C., P. Flament, D. Luther and K.-W. Gurgel, "Observations of vortex Rossby waves associated with a mesoscale cyclone", *J. Phys. Ocean.*, v. 40 pp. 2333-2340, 2010.

Chavanne, C., P. Flament, and K.-W. Gurgel, "Observations of strong submesoscale anticyclone and associated frontogenesis near an island", *J. Phys. Ocean.*, v. 40 pp. 1802-1818, 2010.

Other significant:

Gordon, A.L., P. Flament, C. Villanoy, L. Centurioni, "The Nascent Kuroshio of Lamon Bay", *J. Geophys. Res.*, 119:4251-4263, 2014.

Lumpkin, C. and P. Flament, "Extent and energetics of the Hawaiian Lee Countercurrent", *Oceanogr.*, v. 26, pp. 42-49, 2013.

Sprintall, J., A.L. Gordon, P. Flament and C. Villanoy, "Observations of Exchange between the South China Sea and the Sulu Sea", *J. Geophys. Res.*, v. 17, C05036, 2012.

Chavanne, C., P. Flament, E. Zaron, G. Carter, M. Merrifield, D. Luther and K.-W. Gurgel, "The surface expression of internal tides in the Kauai Channel, Hawai'i. I: observations and numerical models", *J. Phys. Ocean.*, v. 40 pp. 1155-1179, 2010.

Publications are available at <http://www.satlab.hawaii.edu/>.

(d) Synergistic Activities:

Flament, P., S.C. Kennan, C.R Lumpkin, and E.D. Stroup, "The ocean," in *The Atlas of Hawai'i*, pp. 82-86, University of Hawai'i Press, Honolulu, 1998. Also published as a 24"x36" poster.

"The ocean atlas of Hawai'i", <http://oos.soest.hawaii.edu/pacioos/outreach/oceanatlas/index.php>

Project leader, HF radar component, NOAA Pacific Integrated Observing System, 2007-present.

Project leader, Development of a low-cost open-design HF radar, 2007-present.

Organizer, 2nd (2002) and 8th (2008) Radio Oceanography Workshops (ROW-2 and ROW-8).

Steering committee member, ONR Philippines Straights Experiment (Philex), 2006-2010.

Chief Scientist, joint US-Philippines training cruises, R/V Melville, 2007-2009.

Coordinator, "WOCE global mean wind fields from satellite scatterometers", 1997-2002.

Graduate students advised: 5 PhD (Sean Kennan, Rick Lumpkin, Cedric Chavanne, Charina Repollo, Alma Castillo), 9 MSc (Kathy Ozimek, Diane Wenzel, Michael Sawyer, Tyson Hilmer,

# **Biographical Sketch**

## **Kim Nicholas Holland, Researcher Professor**

Hawaii Institute of Marine Biology, University of Hawaii at Manoa

### **EDUCATIONAL BACKGROUND**

- Ph.D. (Biology) 1980. University of Pennsylvania
- M.S. (Zoology) 1975. University of Hawaii
- B.A. Hons. (Zoology) 1971. University of Hawaii

### **ADDITIONAL ACADEMIC AFFILIATIONS**

- Senior Research Fellow, Joint Institute of Marine and Atmospheric Sciences, School of Ocean and Earth Sciences, University of Hawaii.
- Graduate Faculty, Zoology Graduate Program, University of Hawaii.
- Graduate Faculty, Graduate Program in Marine Biology, University of Hawaii
- Affiliated Researcher, IMAR, University of Azores

### **BRIEF OVERVIEW OF AREAS OF PROFESSIONAL INTEREST**

My academic interests lie where fish behavior, physiology and ecology intersect. In addition to their intrinsic interest, I find great reward in applying our understanding of these phenomena to developing strategies for sustainable management of living marine resources. This often requires studying the distribution, behavior patterns, habitat preferences and physiology of free-ranging marine animals as they move around in their natural environments. To this end, I pioneered the use of small research vessels to conduct tracking studies of pelagic and coastal marine fishes. This work uses a wide variety of electronic tags and my research group has been at the forefront of the development and deployment of novel types of tags. These include devices that can detect social interactions, measure and record and transmit oceanographic data and detect and quantify feeding events in free-swimming predators.

I also maintain an active program of laboratory-based studies which primarily focus on elucidating the sensory physiology (e.g., olfaction, electrosense and magnetic field perception) of various species

These areas of interest have provided me the opportunity to conduct collaborative research activities in all of the world's oceans and with collaborators from over twenty countries. I serve on several national and international scientific advisory committees and I am the Co-Editor in Chief of the journal *Animal Biotelemetry*.

## SELECTED CURRENT INTERNATIONAL COMMITTEE MEMBERSHPS

- International Scientific Advisory Committee, Ocean Tracking Network
- Steering Group, Animal Tracking Network (USA/NOAA)
- By-catch Mitigation Science Committee, International Seafood Sustainability Foundation
- IUCN SSC Shark Specialist Group (Eastern Pacific)
- Argos satellite system Joint Tariff Agreement Committee and Executive Committee

## SELECTED RECENT REFEREED PUBLICATIONS

Royer, M., Maloney K., Meyer, C., Cardona E., Payne, N., Whittingham, K., Silva, G., Blandino, C. and Holland K., 2020 Scalloped hammerhead sharks swim on their side with diel shifts in roll magnitude and periodicity. **Animal Biotelemetry**. *In Press*

Tolotti, M.T., Forget, F., Capello, M., Filmalter, J.D., Hutchinson, M., Itano, D., Holland, K. and Dagorn, L., 2020. Association dynamics of tuna and purse seine bycatch species with drifting fish aggregating devices (FADs) in the tropical eastern Atlantic Ocean. **Fisheries Research**, 226, p.105521.

Coffey, D.M., Royer, M.A., Meyer, C.G. and Holland, K.N., 2020. Diel patterns in swimming behavior of a vertically migrating deepwater shark, the bluntnose sixgill (*Hexanchus griseus*). **PloS one**, 15(1), p.e0228253.

Holland K.N., Anderson J.M., Coffey D.M., Holmes B.J., Meyer C.G. and Royer M.A. 2019. A Perspective on Future Tiger Shark Research. **Front. Mar. Sci.** 6:37.

Hutchinson, M., Coffey, D.M., Holland, K., Itano, D., Leroy, B., Kohin, S., Vetter, R., Williams, A.J. and Wren, J. 2019. Movements and habitat use of juvenile silky sharks in the Pacific Ocean inform conservation strategies. **Fisheries Research**, 210, pp.131-142

Meyer, C. G., Anderson, J. M., Coffey, D. M., Hutchinson, M. R., Royer, M. A., and Holland, K. N. 2018. Habitat geography around Hawaii's oceanic islands influences tiger shark (*Galeocerdo cuvier*) spatial behaviour and shark bite risk at ocean recreation sites. **Scientific Reports**, 8(1), 4945.

Anderson, J.M., Clegg, T.M., V´eras, L.V. and Holland, K.N. 2017. Insight into shark magnetic field perception from empirical observations. **Scientific Reports**, 7.

Jeanniard-du-Dot, T., Holland, K., Schorr, G.S. and Vo, D. 2017. Motes enhance data recovery from satellite-relayed biologgers and can facilitate collaborative research into marine habitat utilization. **Animal Biotelemetry**, 5(1), p.17.

## Melissa M. Iwamoto

School of Ocean and Earth Science and Technology, University of Hawai‘i at Mānoa  
[melissa.iwamoto@hawaii.edu](mailto:melissa.iwamoto@hawaii.edu)

### Education

- 2007 M.A. Geography (tropical coastal resource management), University of Hawai‘i at Mānoa (UHM)  
1999 B.A. Geology, DePauw University

### Selected Professional Appointments

- 2016-present Director, Pacific Islands Ocean Observing System  
2014-2016 Deputy Director, Pacific Islands Ocean Observing System  
2011-2014 Outreach and Program Coordinator, Pacific Islands Ocean Observing System  
2007-2011 Planner V, Coastal Zone Management, State of Hawai‘i Office of Planning  
2007-2010 Social Science Consultant, Impact Assessment, Inc.  
2005-2006 Graduate Research Asst., Dr. Mark Ridgley, Geography Department, UHM

### Selected funded projects as Principal Investigator

- \$20M ceiling Enhancing and Sustaining the Pacific Islands Ocean Observing System, NOAA IOOS, 2016-2021  
\$497,738 Enhancing Public Safety with Improved Atmospheric and Wave Forecasts for Guam, Commonwealth of the Northern Mariana Islands, and American Samoa, DOI OIA TAP, 2018-2021  
\$500,000 Enhancing Community Resilience with Real-Time Notifications of Hazardous Wave-driven Flooding and Erosion Events, NOAA OCM’s Regional Coastal Resilience Grant, 2017-2020  
\$85,553 Automatic Water Quality Monitoring in Maunalua Bay, State of Hawai‘i Department of Health, Clean Water Branch, 2019-2020  
\$109,182 Pacific Waves and Water Levels, subcontract under Louis Berger for Task Order from USACE’s Institute for Water Resources, 2017-2019  
\$74,342 Sustaining Operational Wave Forecasts in the Pacific Islands, DOI OIA TAP, 2016-2019

### Professional Publications

- Iwamoto**, MM, Dorton, J, Newton, J, Yerta, M, Gibeaut, J, Shyka, T, Kirkpatrick, B, Currier, R. **2019**. Meeting Regional, Coastal and Ocean User Needs With Tailored Data Products: A Stakeholder-Driven Process. *Front. Mar. Sci.* 6:290. doi: 10.3389/fmars.2019.00290
- Li, N, Thompson, PR, **Iwamoto**, MM. **2019**: Pacific Waves and Water Levels Project Report. SOEST Technical Report #10710. May 2019. 91 pp.
- Ostrander CE, **Iwamoto** MM and Langenberger F. **2019**. An Innovative Approach to Design and Evaluate a Regional Coastal Ocean Observing System. *Front. Mar. Sci.* 6:111. doi: 10.3389/fmars.2019.00111
- Guiles M, Azouri A, Roeber V, **Iwamoto** MM, Langenberger F, Luther DS. **2019**. Forecasts of Wave-Induced Coastal Hazards in the United States Pacific Islands: Past, Present, and the Future. *Frontiers in Marine Science.* 6:170. doi: 10.3389/fmars.2019.00170
- Langenberger, F and **Iwamoto**, M. **2016**. PacIOOS: Ocean Observations to Empower Pacific Islanders. *Sidelights Journal* 46:(5), 24-25.

**Iwamoto**, M, Langenberger, F, Ostrander, CE. 2016. Ocean observing: Serving stakeholders in the Pacific. *Marine Technology Society Journal*, 50(3): 47-58.

Glazier, E, Carothers, C, Milne, N, and **Iwamoto**, M. 2013. Seafood and Society on O‘ahu in the Main Hawaiian Islands. *Pacific Science* 67:(3), 345-359.

**Selected Professional Activities**

Member, IOOS Association Board, 2014-present

Policy Committee, 2017-present;

Executive Committee, 2015-2017;

Finance Committee 2014-16

Member, NOAA Pacific Islands Regional Team (PIRT), 2014-2018

Member, Hawai‘i Ocean Resources Management Plan Working Group, 2011-present

Member, NOAA Pacific Regional Outreach Group, 2011-2014

## FIONA LANGENBERGER

1680 East-West Road, POST 815, Honolulu, HI 96822  
fional@hawaii.edu  
phone: (808) 956-8784

### WORK EXPERIENCE

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- Sep. 2014 – present      **Pacific Islands Ocean Observing System**  
Communications and Program Coordinator, Honolulu, HI
- Dec. 2011 – Sep. 2014      **NOAA's Hawaiian Islands Humpback Whale National Marine Sanctuary**  
Programs Administrator, Honolulu, HI
- Jan. 2010 – Dec. 2011      **NOAA's Hawaiian Islands Humpback Whale National Marine Sanctuary**  
O'ahu Programs Assistant, Honolulu, HI
- July 2008 – Jan. 2010      **NOAA's Hawaiian Islands Humpback Whale National Marine Sanctuary**  
Volunteer, Honolulu, HI
- Sep. 2007 – Feb. 2008      **Raytheon Anschütz GmbH**  
Internship and preparation of final year dissertation within the Quality Management Department, Kiel, Germany
- Feb. 2006 – June 2006      **ThyssenKrupp Services AG**  
Internship at Central Materials Management, Düsseldorf, Germany

### EDUCATION

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- July 2006 – July 2007      **University of Western Sydney, Australia**  
Master of International Business  
2007 Dean's Merit List for outstanding academic achievement
- Sep. 2003 – April 2008      **University of Applied Sciences Kiel, Germany**  
German Dual-Diploma in Business Administration

### PUBLICATIONS

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- Ostrander C.E., Iwamoto M.M. and **Langenberger F.** 2019. An Innovative Approach to Design and Evaluate a Regional Coastal Ocean Observing System. *Front. Mar. Sci.* 6:111. doi: 10.3389/fmars.2019.00111
- Guiles M., Azouri A., Roeber V., Iwamoto M.M., **Langenberger F.**, Luther D.S. 2019. Forecasts of Wave-Induced Coastal Hazards in the United States Pacific Islands: Past, Present, and the Future. *Frontiers in Marine Science.* 6:170. doi: 10.3389/fmars.2019.00170
- Langenberger, F.** and Iwamoto, M. 2016. PacIOOS: Ocean Observations to Empower Pacific Islanders. *Sidelights Journal* 46:(5), 24-25.
- Iwamoto, M., **F. Langenberger**, C.E. Ostrander. 2016. Ocean observing: Serving stakeholders in the Pacific. *Marine Technology Society Journal*, 50(3):47:58.

## SELECTED PROFESSIONAL ACTIVITY

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Chair, IOOS Regional Association Outreach Committee, Oct. 2016-2017

Member, NOAA Pacific Regional Outreach Group, 2014-present

Member, Hawai'i Ocean Resource Management Plan Working Group, 2014-present

## SKILLS

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Fluent in German and English, basic Spanish skills

Proficient in Adobe InDesign, Illustrator, Photoshop; MS Office Package

Proficient in administrating WordPress website and basic knowledge of HTML



# JOHN MAURER

Pacific Islands Ocean Observing System (PacIOOS) • University of Hawai'i at Mānoa  
+1 (808) 956-0227 • [jmaurer@hawaii.edu](mailto:jmaurer@hawaii.edu) • <http://www2.hawaii.edu/~jmaurer>  
1680 East-West Rd, POST-815C, Honolulu, HI, USA (on the island of O'ahu)

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## EDUCATION

- **University of Colorado at Boulder:** M.A. in [Geography](#), May 2006. Advisor: [Dr. Konrad Steffen](#). Thesis topic: Local-scale snow accumulation variability on the Greenland ice sheet from ground-penetrating radar (GPR) ([click here for details](#)).
  - **University of Colorado at Boulder:** [Graduate Certificate in Remote Sensing](#), Program in Atmospheric and Oceanic Sciences (PAOS), Fall 2001 - May 2003.
  - **Stanford University**, Palo Alto, CA: B.A. Music, *with distinction*, June 1999. Specialization in "Music, Science and Technology" (MST) through the Center for Computer Research in Music and Acoustics (CCRMA).
  - **Hopkins Marine Station (HMS)**, Stanford University, Monterey, CA. Winter 1998. Marine science and underwater acoustics ([click here for details](#)).
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## HONORS AND AWARDS

- [RCUH 2016 Outstanding Employee of the Year](#) nominee, Research Corporation of the University of Hawai'i (RCUH), 2016. 1 of 25 final nominees out of ~2,800 RCUH employees statewide.
  - [CIRES 2007 Outstanding Performance Award](#), Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado at Boulder, 2007. 1 of 2 selected annually for the Service Award out of ~500 employees.
  - [Deans' Award for Academic Accomplishment](#), Stanford University, 1997. 1 of 11 selected out of 6500 undergraduates.
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## PROFESSIONAL EXPERIENCE

- **Pacific Islands Ocean Observing System (PacIOOS)**, [University of Hawai'i at Mānoa](#), Honolulu, HI, USA. July 16, 2009 - present:
    - [PacIOOS Data System Engineer](#)
  - **National Snow and Ice Data Center (NSIDC)**, [University of Colorado](#), Boulder, CO, USA. March 1, 2001 - June 1, 2009:
    - [Web/Database Applications Engineer](#), September 13, 2004 - June 1, 2009.
    - [User Services Representative](#), July 1, 2003 - September 10, 2004.
    - [Operations Technician II](#), May 1, 2002 - June 30, 2003.
    - [Operations Technician I](#), March 1, 2001 - April 30, 2002.
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## PUBLICATIONS

- Potemra, J., J. Maurer, and E.S. Burns (2016), Providing Oceanographic Data and Information to Pacific Island Communities. In P. Diviacco, A. Leadbetter, and H. Glaves (Eds.). *Oceanographic and Marine Cross-Domain Data Management for Sustainable Development*. 425 pp. Hershey, PA: IGI Global.
  - Maurer, IV, J.A. (2006), Local-scale snow accumulation variability on the Greenland ice sheet from ground-penetrating radar (GPR). Master's thesis, University of Colorado at Boulder. Available from <http://www2.hawaii.edu/~jmaurer/gpr/>.
-

## PRESENTATIONS

- Maurer, J. (2019), Ocean Observations: Data Storage and Transfer. *Fourth Data Buoy Cooperation Panel (DBCP) Pacific Islands Training Workshop on Ocean Observations and Data Applications (DBCP-PI-4)*. September 14, 2019, Honolulu, HI, USA. [[Click here to view](#) (7.2 MB).]
  - Maurer, J. and F. Langenberger (2019), Data Streams at PacIOOS: From Acquisition to End Products. *Hawaii Surveying And Mapping Conference 2019*. March 21, 2019, Honolulu, HI, USA. [[Click here to view](#) (7.4 MB).]
  - Maurer, J. and F. Langenberger (2018), PacIOOS Projects Using Open Source GIS for Web Visualization. *Hawaii Geographic Information Coordinating Council (HIGICC) Oahu Geospatial Expo 2018*. June 22, 2018, Honolulu, HI, USA. [[Click here to view](#) (4.9 MB).]
  - Potemra, J. T., J. Maurer, R. Coughlin, R. Buzzetti and S. DeCarlo (2010), [Data services for Pacific Island communities: Developing the Pacific Integrated Ocean Observing System](#). *IMDIS-2010 Proceedings, IFREMER/SISMER*, M. Fichaut and V. Tosello, Editors, 224 pp.
  - Maurer, J. and K. Steffen (2007), Local-scale snow accumulation variability on the Greenland ice sheet from ground-penetrating radar (GPR). Presentation #NS14A-06. *American Geophysical Union (AGU) Fall Meeting*. December 10-14, 2007, San Francisco, CA, USA. [[Click here to view abstract](#); [click here to view presentation](#) (5.1 MB).]
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## SOFTWARE/TOOLS DEVELOPMENT

- **PacIOOS Website: Data Visualization.** Dynamic online data visualization of both raster maps and time series plots of PacIOOS forecast models and point-based observations; e.g., <http://pacioos.org/waves/model-maui/> (wave forecast) and <http://pacioos.org/waves/buoy-waimea/> (wave buoy), etc.
  - **PacIOOS Voyager.** A Google Maps API for dynamically viewing and downloading maps and data related to Hawai'i and other U.S.-affiliated Pacific Islands as part of the Pacific Islands Ocean Observing System (PacIOOS). <http://pacioos.org/voyager/>
  - **Hawai'i Tiger Shark Tracking.** Animates the movements of several tiger sharks in near real-time who are fitted with satellite tags. <http://pacioos.org/projects/sharks/>
  - **Hawai'i Sea Level Rise Viewer.** Maps future sea level rise exposure areas around the State of Hawai'i using GeoServer and the Leaflet mapping API. <http://pacioos.org/shoreline/slr-hawaii/>
  - **Hawai'i and Pacific Islands King Tides Project.** For documenting coastal inundation and flooding. Mobile-friendly photo submission web app (<http://pacioos.org/king-tides/>), mapping and display platform (<http://pacioos.org/king-tides/map.html>), and authenticated admin interface.
  - **Hawaiian Ko'a (Coral) Card: Coral Health Assessments.** For monitoring coral bleaching events. Mobile-friendly data submission web app (<http://pacioos.org/coral-card/>), mapping and display platform (<http://pacioos.org/coral-card/map.html>), and authenticated admin interface.
  - **Ocean Tipping Points: Hawai'i Case Study.** A Leaflet-based online mapping platform for dynamically viewing and querying maps of environmental and anthropogenic drivers of coral reef ecosystems around the main Hawaiian islands. <http://pacioos.org/projects/otp/>
  - **PacIOOS Data Search.** A user-friendly search interface for finding geospatial datasets at PacIOOS, powered by pycsw and PostGIS to utilize OGC Catalog Service for the Web (CSW) search standards. <http://pacioos.org/data/search/>
  - **PacIOOS Metadata.** Web-accessible folders (WAF) for FGDC and ISO 19115 XML geospatial metadata records including XSLT stylesheets for dynamic HTML presentation. <http://pacioos.org/data/metadata/>
  - **GPR IDL Tools.** IDL and ENVI software tools for opening, viewing, filtering, and analyzing Malå Geoscience RAMAC™ ground-penetrating radar (GPR) data. <http://gpr-idl-tools.sourceforge.net>
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## PROFESSIONAL SERVICE

- Technical reviewer for:
    - Baghat, Karim (2015), *Python Geospatial Development Essentials*. Packt Publishing. 192 pp.
    - Lawhead, Joel (2015), *Learning Geospatial Analysis with Python*. Packt Publishing. 367 pp.
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## Biographical Sketch

Professor and Chairwoman M.A. McManus  
Department of Oceanography  
University of Hawaii at Manoa  
Honolulu, HI 96822  
mamc@hawaii.edu

### (i) Professional Preparation

#### Education

University of Virginia	Environmental Science	B.A.	1989
Old Dominion University	Biological Oceanography	M.S.	1991
Old Dominion University	Physical Oceanography	Ph.D.	1996

#### Post-doctoral Training

University of Rhode Island	Oceanography	1996-1998
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### (ii) Appointments

Chairwoman, Department of Oceanography, University of Hawaii at Manoa	2020-present
Professor of Oceanography, University of Hawaii at Manoa	2012-present
Associate Professor of Oceanography, University of Hawaii at Manoa	2007-2012
Assistant Professor of Oceanography, University of Hawaii at Manoa	2003-2007
Assistant Professor of Ocean Sciences, University of California Santa Cruz	2000-2003
Assistant Marine Research Scientist, University of Rhode Island	1998-2000

### (iii) Products

\*All publications listed: <http://margaretmcmanus.com/Publications.html>

\*Names of McManus Lab members, graduate students and postdoctoral researchers are underlined

\*Prior to June 2002 MA McManus published under the name MM Deksheniaks

#### Five recent publications:

1. Winter KB, N Kekuewa Lincoln, F Berkes, RA Alegado, N Kurashima, KL Frank, P Pascua, YM Rii, F Reppun, ISS Knapp, WC McClatchey, T Ticktin, C Smith, EC Franklin, K Oleson, MR Price, **MA McManus**, MJ Donahue, KS Rodgers, BW Bowen, CE Nelson, B Thomas, J-A Leong, EMP Madin, MJ Rivera, KA Falinski, LL Bremer, JL Deenik, SM Gon III, B Neilson, R Okano, A Olegario, B Nyberg, A Kawelo, K Kotubetey, J Kukea-Shultz and RJ Toonen. **2020**. Ecomimicry in Indigenous resource management: optimizing ecosystem services to achieve resource abundance, with examples from Hawai'i. *Ecology and Society* 25 (2):26. [online] URL: <https://www.ecologyandsociety.org/vol25/iss2/art26/>
2. Gove JM, JL Whitney, **MA McManus**, J Lecky, F Carvalho, JM Lynch, J Li, P Neubauer, K Smith, JE Phipps, DR Kobayashi, KB Balagso, EA Contreras, ME Manuel, MA Merrifield, JJ Polovina, GP Asner, JA Maynard, GJ Williams. **2019**. Prey-sized plastics are invading larval fish nurseries. *PNAS*. <https://doi.org/10.1073/pnas.1907496116>
3. Gove JM, **MA McManus**, AB Neuheimer, JJ Polovina, JC Drazen, CR Smith, MA Merrifield, AM Freidlander, JS Ehse, C Young, AK Dillon, GJ Williams. **2016**. Ocean oases: near-island biological hotspots in barren ocean basins. *Nature Communications*. 7:10581 doi: 10.1038/ncomms10581.

4. Gove JM, GJ Williams, MA **McManus**, JS Clark, JS Ehses. **2015**. Coral reef benthic regimes exhibit non-linear threshold responses to natural physical drivers. *Marine Ecology Progress Series* Vol. 522: 33–48.
5. Fiedler JW, MA **McManus**, MS Tomlinson, EH DeCarlo, ER Pawlak, GF Steward, OD Nigro, RE Timmerman, TS Drupp, JR Wells and CE Ostrander. **2014**. Real-time observations of the February 2010 Chile and March 2011 Japan tsunamis in Honolulu, Hawaii as recorded by the PacIOOS. *Oceanography*. 27(2): 16-30.

Five other significant publications:

1. **McManus** MA and CB Woodson. **2012**. Review: Plankton distribution and oceanic dispersal. *Journal of Experimental Biology* Special Issue: *Biophysics, Bioenergetics, and the Mechanistic Approach to Ecology*. Volume 215(6): 1008-1016.
2. **McManus** MA, JC Sevadjian, KJ Benoit-Bird, OM Cheriton, AV Timmerman, CM Waluk. **2012**. Observations of thin layers in coastal Hawaiian waters. *Estuaries and Coasts*. Volume 35(4): 1119-1127.
3. **McManus** MA, RM Kudela, MV Silver, GF Steward, JM Sullivan, PL Donaghay. **2008**. Cryptic blooms: Are thin layers the missing connection? *Estuaries and Coasts*. 31: 396-401.
4. **McManus** MA, KJ Benoit-Bird, CB Woodson. **2008**. Behavior exceeds physical forcing in the diel horizontal migration of a midwater sound-scattering layer in Hawaiian waters. *Marine Ecology Progress Series*. 365: 91-101.
5. **McManus** MA, OM Cheriton, PT Drake, DV Holliday, CD Storlazzi, PL Donaghay, CE Greenlaw. **2005**. The effects of physical processes on the structure and transport of thin zooplankton layers in the coastal ocean. *Marine Ecology Progress Series*. 301: 199-215.

**(iv) Synergistic activities**

1. **2020-present. Chairwoman, Department of Oceanography**, University of Hawaii at Manoa.
2. **2014-2015. Associate Chair, Department of Oceanography**, University of Hawaii at Manoa.
3. **2012-2015. Physical Oceanography Division Head**. Department of Oceanography, University of Hawaii at Manoa.
4. **2011-2013. GEOHAB: IOC-SCOR** (Global Ecology and Oceanography of Harmful Algal Blooms: International Oceanographic Commission – Scientific Committee on Oceanic Research). Subcommittee for stratified systems.
5. **2011-2013. Guest Editor**. *Deep Sea Research* Special Issue: Harmful Algal Blooms (HABS) in stratified systems. With RH Raine, H Yamazaki and E Berdelet.

**(v) Affiliations**

Graduate student advising (committee chair): Anna Pfeiffer-Hoyt (Herbert) (MS/UCSC/ 2005); Chris Ostrander (MS/UH/2007); Olivia M Cheriton (PhD/UCSC/2008); Jeff M Sevadjian (MS/UH/2008); Amanda Timmerman (MS/UH/2012); Jamie Gove (PhD/UH/2013), Conor Jerolmon (MS/UH/in progress)

Post-doctoral advising: Dr. Jon Whitney (now at NOAA), Dr. Katharine Smith (now at University of Hawaii at Manoa), Dr. Olivia M Cheriton (now at USGS); Dr. Dan Hoover (now at USGS); Dr. Shaun Johnston (now at Scripps); Dr. Curt Storlazzi (now at USGS); Dr. C Brock Woodson (now at the University of Georgia)

## James T. Potemra

University of Hawaii, Hawaii Institute of Geophysics and Planetology  
1680 East West Road, POST-401, Honolulu, HI 96822

### 1. Education

- 1998 Ph.D., Oceanography, University of Hawaii
- 1990 M.S., Oceanography, Florida State University
- 1986 B.S., Physics, Stevens Institute of Technology

### 2. Appointments

- 2018-pres. Specialist, Hawaii Institute of Geophysics and Planetology (HIGP), University of Hawaii
- 2012-2018. Associate Specialist with tenure, Hawaii Institute of Geophysics and Planetology (HIGP), University of Hawaii
- 2016-pres. Cooperating Graduate Faculty, Department of Oceanography, University of Hawaii
- 2013-pres. Affiliate faculty, Hawaii Pacific University
- 2010-pres. Manager, Asia-Pacific Data Research Center (APDRC), IPRC, University of Hawaii
- 2008-2012 Assistant Specialist, Hawaii Institute of Geophysics and Planetology (HIGP), University of Hawaii
- 2001-2008 Assistant Researcher, International Pacific Research Center (IPRC), University of Hawaii
- 1999-2001 Research Associate, Post-doctoral, School of Oceanography, University of Washington

### 3. Five Recent Publications

- 2017 Hardesty, B. D., J. Harari, A. Isobe, L. Lebreton, N. Maximenko, J. T. Potemra, E. van Sebille, D. Vethaak and C. Wilcox. Using numerical model simulations to improve the understanding of micro-plastic distribution and pathways in the marine environment, *Frontiers in Mar. Sci.*, in press.
- 2017 Melnichenko, A. Amores, N. Maximenko, P. Hacker and J. T. Potemra. Signature of mesoscale eddies in satellite sea surface salinity data, *J. Geophys. Res.*, in press.
- 2016 Potemra, J. T., P. W. Hacker, O. Melnichenko and N. Maximenko. Satellite estimate of freshwater exchange between the Indonesian Seas and the Indian Ocean via the Sunda Strait, *J. Geophys. Res.*, in press.
- 2016 Potemra, J. T., J. Maurer and E. Burns. Providing Oceanographic Data and Information to Pacific Island Communities, *Oceanographic and Marine Cross-Domain Data Management for Sustainable Development*, P. Diviacco, A. Leadbetter and H. Glaves editors, in press.
- 2016 Melnichenko, O.V., P. Hacker, N.A. Maximenko, G. Lagerloef, and J.T. Potemra. : Optimum interpolation analysis of Aquarius sea surface salinity, *J. Geophys. Res. Oceans*, 121, doi:10.1002/2015JC011343 .

#### 4. Awards

Editor's Citation for Excellence in Refereeing, *Geophysical Research Letters*, 2008  
University of Hawaii Graduate Student Organization (GSO) Travel Award, 1998  
Achievement Rewards for College Scientists (ARCS) Scholarship Award, 1997/98  
Student Travel for Achievement in Research (STAR), Best Talk 1995  
J. Watumull Merit Scholarship 1995  
AGU Student Travel Grant 1994  
NASA Traineeship 1988 and 1989

#### 5. Synergistic Activities

Member of the American Meteorological Society (AMS) Board on Data Stewardship (2010-present)  
Member of NASA Physical Oceanography Data Assembly Center User Working Group PO.DAAC/UWG; 2014-present)  
Member of Pacific Climate and Information Center (PaCIS) Executive Board (2011)  
Member of International CLIVAR Panel for the Indonesian Throughflow (2011-2016)  
NASA Physical Oceanography Panel (2011)  
UH NSF EPSCoR cyber team member (2011)  
Member of NASA Salinity Science Team (2010 - present)  
NOAA Analysis of Acquisition Alternatives Panel (2009)  
Member of NOAA Data Integration Framework (DIF) regional implementation group (2008-present)  
Member of NOAA IOOS regional observation registry technical advisory committee (2007-2008)  
Chair of Pacific Argo Regional Center (2006-present)  
Member of PI-GOOS Steering Committee (2006-present)

#### 6. Teaching Activities

OCN-310	Global Environmental Change, Fall 2012
OCN-363	Earth System Science Spring 2005 - present
OCN-418	Embedded Systems, Fall 2016
OCN-496	Topics in GES: Climate Change, Fall 2011
MARS-3080	Dynamic Physical Oceanography (Hawaii Pacific University), Spring 2005 and 2003.
Ocean-510	Physics of Ocean Circulation (University of Washington), Fall 2001.
Ocean-515	Observations of Ocean Circulation (University of Washington), Winter 2000.

#### 7. Collaborations (last five years)

Bruce Howe, Roger Lukas, Mark Merrifield (U. Hawaii Manoa); Al Pludemann, Robert Weller (WHOI); Janet Sprintall, Julie Thomas (Scripps/UCSD); Yukio Masumoto (JAMSTEC/U. Tokyo); Arnold Gordon (LDEO/U. Columbia); Maria Haws (U. Hawaii Hilo); John Marra (NOAA).

**Charles (Chip) W. Young III***Curriculum Vitae*

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**Education**

MSc	University of Hawai'i at Mānoa Honolulu, Hawai'i	2003-2011
	Department of Oceanography Marine Geology and Geochemistry Advisors: Kathleen Ruttenberg and Margaret McManus	
BS	United States Naval Academy Annapolis, Maryland	1989-1993
	Political Science/General Engineering	

**Scientific Interests**

Impacts of thermal stress and ocean acidification on tropical coral reef ecology; coastal nutrient cycling and phytoplankton community composition dynamics; ecosystem monitoring; and socioeconomic effects of climate change on Pacific Island nations

**Research and Work Experience**

Pacific Islands Ocean Observing System/Joint Institute for Marine and Atmospheric Research  
University of Hawai'i at Mānoa, Honolulu, Hawai'i

Operations Coordinator

PacIOOS 2019-Present

- Coordination and management of day-to-day operations
- Provide field/technical support and expertise for PacIOOS projects
- Develop capacity, opportunities, and training throughout the Insular Pacific

Joint Institute for Marine and Atmospheric Research/

National Oceanic and Atmospheric Administration, Pacific Islands Fisheries Science Center,  
Honolulu, Hawai'i

Oceanographer

JIMAR/NOAA, PIFSC, Ecosystem Sciences Division 2011-2019

Marine Ecosystems Specialist

JIMAR/NOAA, PIFSC, Coral Reef Ecosystem Division 2005-2010

- Manage and report on a variety of oceanographic data streams (discrete collections and instrument time-series) collected around 35+ U.S. affiliated islands and atolls across the Pacific Ocean as part of NOAA's Reef Assessment and Monitoring Program
- Served as Chief Scientist, Team Lead, and/or led logistic operations for more than 15 multi-month field expeditions onboard NOAA vessels, contracted research vessels, and land-based field missions
- Extensive experience in the field, annually spending up to 100+ days at sea conducting coral reef research and monitoring efforts since 2005 (NOAA Scientific SCUBA Diver-Nitrox, NOAA Small Boat Coxswain)
- Thoroughly proficient in oceanographic instrument maintenance, programming and

deployment (Sea Bird Electronics: SBE-19plus CTD, SBE-39, SBE-56; Nortek: Aquadopp ADCP; SonTek: ADCP; Yellow Springs International: YSI-6920 multi-parameter sonde; Satlantic: SeaFET pH; McLane Labs: Remote Access Sampler; moored buoys: NOAA MApCO<sub>2</sub>, NOAA SST; and benthic moored instrument packages)

- Responsible for ensuring oceanographic instrumentation and equipment is calibrated and ready for use during research expeditions
- Well versed in analytical chemistry laboratory techniques
- Maintained long-term academic research collaborations, which have resulted in co-authorship of numerous peer-reviewed publications in high impact factor journals
- Written and executed permits for specialized scientific collections within the State of Hawai'i and internationally

Colliers International Commercial Real Estate Brokerage  
Leasing Agent

Colliers International, San Diego, California 2000-2002

United State Marine Corps - Infantry Officer  
Series Commander

USMC Marine Corps Recruit Depot, San Diego, California 1998-1999

Platoon Commander

USMC Golf Company, 2<sup>nd</sup> Battalion, 5<sup>th</sup> Marine Regiment 1994-1997

Marine Corps Base Camp Pendleton, California

### General Skills

- Coxswain with open ocean, coral reef and surf zone navigation experience in single and multiple engine small boat operations; vessels from 18'-28' in length
- SCUBA diver with 750+ scientific dives
- Extensive experience with making scientific observations and collections in the field
- Extensive experience with preparing, programming, installing and recovering oceanographic instrumentation for benthic and moored deployments in coastal and open ocean environments
- Extensive experience in field research logistics, planning, and operations
- Responsible and capable in performing analytical laboratory methodologies and maintaining equipment

### Certifications/Awards

- American Academy of Underwater Sciences (AAUS) and NOAA Scientific Diver
- NOAA Small Boat Coxswain
- JIMAR/NOAA "**Team Member of the Year**" Award - 2014

### Selected Publications/Presentations

- (in review) Venegas RM, Oliver TA, Clarke SJ, **Young CW**, Pomeroy NV, Heron CS, Liu G, Eakin CM, Brainard RE. Coral Reefs. Thermal stress at coral reefs depth: Improving estimations to the myth of deep water thermal refugia
- (in prep) Timmerman AHV, **Young CW**, Briggs R, D'Andrea B, McManus MA, Ruttenberg KC. Dynamics of land-ocean linkages in a semi-enclosed tropical coastal system
- Barkley HC, Cohen AL, Mollica NR, Brainard RE, Rivera HE, DeCarlo TM, Lohmann GP,



Drenkard EJ, Alpert AE, **Young CW**, Vargas-Angel B, Lino KC, Oliver TA, Pietro KR, Luu VH. 2018. Repeat bleaching of a central Pacific coral reef over the past six decades (1960-2016). *Communications Biology*. 1:177. doi: 10.1038/s42003-018-0183-7

- **Young CW**. 2016. International Coral Reef Symposium Poster Presentation. Observing variability in carbonate chemistry on coral reefs across the Pacific
- Knowles B, et al. 2016. Lytic to temperate switching of viral communities. *Nature*. 531, pp. 466-470. doi:10.1038/nature17193
- Alpert AE, Cohen AL, Oppo DW, DeCarlo TM, Gove JM, **Young CW**. 2016. Comparison of equatorial Pacific sea surface temperature variability and trends with Sr/Ca records from multiple corals. *Paleoceanography*. 31. doi:10.1002/2015PA002897
- Vargas-Angel B, Richards CL, Vroom PS, Price NN, Schils T, **Young CW**, Smith J, Johnson MD, Brainard RE. 2015. Baseline assessment of net calcium carbonate accretion rates on US Pacific reefs. *PLOS ONE*. 10:12. doi: 10.1371/journal.pone.0142196
- **Young CW**. 2012. International Coral Reef Symposium Presentation. Quantifying inter-island variability in aragonite saturation state across the Pacific Ocean
- **Young CW**. 2011. Perturbation of nutrient inventories and phytoplankton community composition during storm events in a tropical coastal system: He'eia fishpond, O'ahu Hawai'i
- Hoeke RK, Gove JM, Smith E, Fisher-Pool P, Lammers M, Merritt D, Vetter OJ, **Young CW**, Wong KB, Brainard RE. 2009. *Journal of Operational Oceanography*. 2:2. doi: 10.1080/1755876X.2009.12027737
- De Carlo EH, Hoover DJ, **Young CW**, Hoover RS, Mackenzie FT. 2007. Impact of storm runoff from tropical watersheds on coastal water quality and productivity. *Applied Geochemistry*. 22:8. doi: 10.1016/j.apgeochem.2007.03.034