

**FRANK EDGAR MULLER-KARGER**  
**CURRICULUM VITAE**

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University of South Florida  
College of Marine Science  
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**I. Personal Information:**

Ancestry: Hispanic  
Employer: University of South Florida, College of Marine Science  
140 7<sup>th</sup> Ave. South, St. Petersburg, FL 33701

**II. Education:**

***Primary and High School:***

1974 *Colegio "Humboldt", Caracas, Venezuela.*

***Undergraduate:***

1974 Universidad Simón Bolívar, Caracas, Venezuela. Chemical Engineering. (1976, transferred to Florida Institute of Technology).  
1979 Bachelor in Biological Oceanography. Florida Institute of Technology. Melbourne, FL.

***Graduate:***

1984 Master of Science in Oceanography. Institute of Marine Science. University of Alaska, Fairbanks, AK. Thesis: Lower trophic level studies in the marginal sea-ice zone. Advisor: Dr. Vera Alexander.  
1988 Ph.D. in Marine and Estuarine Sciences. University of Maryland, Center for Environmental and Estuarine Studies (UMCEES). College Park, MD and Horn Point Environmental Laboratories, Cambridge, MD. Dissertation: Variation in the seasonal distribution of phytoplankton in the Caribbean Sea as observed in a series of Coastal Zone Color Scanner images (1978-1986). Advisors: Thomas R. Fisher (U. Maryland), and Charles R. McClain (NASA, Goddard Space Flight Center).  
2001 Master of Science in Management. University of South Florida. College of Business Administration. Tampa, FL. Organizational design, leadership, human resources and modern management principles and techniques.

**III. Employment:**

2000/- Full Professor. Tenured. University of South Florida  
*Employer: University of South Florida*  
*140 7<sup>th</sup> Ave. S., St. Petersburg, FL 33701*

2007/2009 Dean, School for Marine Science and Technology, Univ. Massachusetts Dartmouth  
Full Professor. Tenured. Univ. Massachusetts Dartmouth  
*Employer: University of Massachusetts Dartmouth*  
*706 South Rodney French Boulevard, New Bedford, MA 02744-1221*

2001/04 Commissioner, U.S. Commission on Ocean Policy  
*Voluntary, serving as nominee of and by appointment of the President of the United States. USCOP Chair: Adm. (USN/Retired) James D. Watkins*

1994/00 Associate Professor. Tenured 1994. University of South Florida

1992/94 Program Scientist, Ocean Biogeochemistry Program: National Aeronautics and Space Administration Headquarters/Jet Propulsion Lab-California Institute of Technology.  
*Employer: CA Institute of Technology, NASA JPL and NASA HQ*

1989/94 Assistant Professor. Department of Marine Science, USF

1988/89 Research Associate, Department of Marine Science, USF (with *Dr. John J. Walsh*)

1985/87 Consultant to Skidaway Institute of Oceanography.  
 1985/87 Consultant to NASA Goddard Space Flight Center.  
 1984/88 Research Assistant, CEES Program, University of Maryland.  
 1984/87 Teaching Assistant, Dept. of Botany, University of Maryland.  
 1979/84 Research Assistant, Institute of Marine Science, U. of Alaska.

#### **IV. Students and trainees while at USF:**

Doctoral – Major Professor: Luis Lizcano Sandoval, Savannah Hartman, Cara Estes, Justin Saarinen, Matthew McCarthy, Abdiel Laureano-Rosario, Maria Vega-Rodríguez, Sennai Habtes, Karen Langbehn (USF English), Laura Lorenzoni, Inia Soto, Digna Rueda, Enrique Montes, David Palandro, Bisman Nababan, Fernando Gilbes, Lisa Vanderbloemen, Zhiqiang Chen. Non-USF/ Doctoral/Co-Major Professor: Joe Salisbury (University of New Hampshire), Sergio Cerdeira (Universidad de la Habana).

Masters: Sebastian DiGeronimo, Megan Hepner, Kaitlyn Colna, Brendan O'Connor, Claudia Baron Aguilar, Juan Carlos Millan, Herschel T. Hochman, Josh Henson, Inia Soto, Laura Lorenzoni, Carrie Wall, Enrique Montes, Ana Lucia Odriozola. Masters/ Co-Major Professor: MingRui Zhang, Wensheng Yao, Jingwei Ke, Haiying Zhang.

Undergraduate: Ana Lucia Odriozola, John Akl (undergr., Eckerd College), Paola Castellanos (undergr., Universidad Simon Bolivar).

Post-doctoral Associates: Laura Lorenzoni, Daniel Otis, Enrique Montes, Digna Rueda-Roa, Tylar Murray, Matt McCarthy, Gerardo Toro-Farmer, Zhiqiang Chen, Richard Bohrer, Gilberto Gaxiola, Eduardo Santamaría, Guillermo E. Quiros, Serge Andrefouet, Cesar Fuentes-Yaco, Chuanmin Hu, Eurico D'Sa, Christian Schiller.

Trainees (not exhaustive): Raoni Bosquilia, Samira Bosquilia, Mahmoud Elmezayen, Mostafa Awad, Mostafa Al-Maghraby, Ezequiel Cozzolino, Paul W. Bissett, Lingzis D. Tang, Roberto Perez, Sergio Cerdeira, Nelson Melo, Jose Rafael Diaz, Paola Filippi, Denis Nadeau, David Lindo-Atichati.

Technicians: Tylar Murray, Sebastian DiGeronimo, Catherine J. Reynolds, Qiao, Robert Chen, C. J. Reynolds, Gabriel Quiles, Brock Murch, Judd Taylor, Michelle McIntyre, Richard Bohrer, Remy Luerssen, Christine Kranenburg, Haiying Zhang, Laura Lorenzoni, Christian Schiller, Damaris Torres, Zhiqiang Chen, MingRui Zhang, Wensheng Yao.

#### **V. Publications: (peer-reviewed)**

##### 2021

Cawse-Nicholson, Kerry-Anne, Philip A. Townsend, David Schimel, Ali M. Assiri, Pamela L. Blake, Maria Fabrizia Buongiorno, Petya Campbell, Nimrod Carmon, Kimberly A. Casey, Rosa Elvira Correa-Pabón, Kyla M. Dahlin, Hamid Dashti, Philip E. Dennison, Heidi Dierssen, Adam Erickson, Joshua B. Fisher, Robert Frouin, Charles K. Gatebe, Hamed Gholizadeh, Michelle Gierach, Nancy F. Glenn, James A. Goodman, Daniel M. Griffith, Liane Guild, Christopher R. Hakkenberg, Eric J. Hochberg, Thomas R.H. Holmes, Chuanmin Hu, Glynn Hulley, Karl F. Huemmrich, Raphael M. Kudela, Raymond F. Kokaly, Christine M. Lee, Roberta Martin, Charles E. Miller, Wesley J. Moses, Frank E. Muller-Karger, Joseph D. Ortiz, Daniel B. Otis, Nima Pahlevan, Thomas H. Painter, Ryan Pavlick, Ben Poulter, Yi Qi, Vincent J. Realmuto, Dar Roberts, Michael E. Schaepman, Fabian D. Schneider, Florian M. Schwandner, Shawn P. Serbin, Alexey N. Shiklomanov, E. Natasha Stavros, David R. Thompson, Juan L. Torres-Perez, Kevin R. Turpie, Maria Tzortziou, Susan Ustin, Qian Yu, Yusri Yusup, Qingyuan Zhang. 2021. NASA's Surface Biology and Geology Designated Observable: A Perspective on Surface Imaging Algorithms. Remote Sensing of Environment. Volume 257, 112349, <https://doi.org/10.1016/j.rse.2021.112349>.

##### 2020

Djurhuus, Anni, Collin J. Closek, Ryan P. Kelly, Kathleen J. Pitz, Reiko P. Michisaki, Hilary A. Starks, Kristine R. Walz, Elizabeth A. Andruszkiewicz, Emily Olesin, Katherine Hubbard, Enrique Montes, Daniel Otis, Frank E. Muller-Karger, Francisco P. Chavez, Alexandria B. Boehm &

- Mya Breitbart. 2020. Environmental DNA reveals seasonal shifts and potential interactions in a marine community. *Nature Communications*. 11, 254. doi:10.1038/s41467-019-14105-1.
- Johns, Elizabeth M., Rick Lumpkin, Nathan F. Putman, Ryan H. Smith, Frank E. Muller-Karger, Digna Rueda, Chuanmin Hu, Mengqiu Wang, Maureen T. Brooks, Lewis J. Gramer, and Francisco E. Werner. 2020. The establishment of a pelagic Sargassum population in the tropical Atlantic: biological consequences of a basin-scale long distance dispersal event. *Progress in Oceanography*. <https://doi.org/10.1016/j.pocean.2020.102269>.
- Krug, Cornelia B., Eleanor Sterling, Timothy Cadman, Jonas Geschke, Paula F. Drummond de Castro, Rainer Schliep, Isimemen Osemwegie, Frank E. Muller-Karger, Tek Maraseni. 2020 (Accepted). Stakeholder participation in IPBES: connecting local environmental work with global decision making. *Ecosystems and People*. 16:1, 197-211. DOI: 10.1080/26395916.2020.1788643
- Laureano-Rosario, Abdiel, Erin M. Symonds, Adriana González-Fernández, Omar G. Lizano R., Darner Mora Alvarado, Pablo Rivera Navarro, Andrei Badilla-Aguilar, Digna Rueda-Roa, Daniel B. Otis, Valerie J. Harwood, Maryann R. Cairns, Frank E. Muller-Karger. 2020 (in press). The relationship between environmental parameters and microbial water quality at two Costa Rican beaches from 2002 to 2017. *Marine Pollution Bulletin*.
- Lear, Dan, Peter Herman, Dr G. Van Hoey, Dr Lennert Schepers, Dr Nathalie Tonné, Dr Marina Lipizer, Dr Frank Muller-Karger, Mr Ward Appeltans, Dr Daniel Kissling, Mr Neil Holdsworth, Dr Martin Edwards, Dr Ellen Pecceu, Dr Henrik Nygård, Dr Gabrielle Canonico, Dr Silvana Birchenough, Dr George Graham, Mr Klaas Deneudt, Mr Simon Claus, Ms Paula Oset. 2020. Supporting the Essential - Recommendations for the development of accessible and interoperable marine biological data products. *Marine Policy*. Volume 117. <https://doi.org/10.1016/j.marpol.2020.103958>.
- McCarthy, M.J., Jessen, B., Barry, M., Figueroa, M., McIntosh, J., Murray, T., Schmid, J., and Muller-Karger, F. 2020. Mapping hurricane damage: A comparative analysis of satellite monitoring methods. *International Journal of Applied Earth Observations and Geoinformation*. Volume 91. <https://doi.org/10.1016/j.jag.2020.102134>.
- McCarthy, Matthew, Brita Jessen, Michael Barry, Marissa Figueroa, Jessica McIntosh, Tylar Murray, Jill Schmid, and Frank E. Muller-Karger. 2020. Automated High-Resolution Time Series Mapping of Mangrove Forests Damaged by Hurricane Irma in Southwest Florida. *Remote Sensing*. 12, 1740; doi:10.3390/rs12111740.
- Montes, Enrique, Anni Djurhuus, Frank Edgar Muller-Karger, Daniel Otis, Christopher R Kelble, Maria T. Kavanaugh. 2020. Dynamic satellite seascapes as a biogeographic framework for understanding phytoplankton assemblages in the Florida Keys National Marine Sanctuary, USA. *Frontiers in Marine Science*, section Marine Ecosystem Ecology. <https://doi.org/10.3389/fmars.2020.00575>
- Ojeda, Patricia, Ramón Varela, Robert Thunell, Frank Muller-Karger, Eric Tappa. 2020. Particle flux in the Cariaco Basin, results of two decades of observations 1995 – 2016. (Flujo de partículas en la Fosa de Cariaco, resultados de dos décadas de observaciones 1995 – 2016). *Memoria de la Fundación La Salle de Ciencias Naturales* 2020 78(186): 65-118
- SCOR Working Group 154. 2020. Recommendations for plankton measurements on the GO-SHIP program with relevance to other sea-going expeditions. SCOR Working Group 154 GO-SHIP Report. Scientific Committee on Oceanic Research, 70pp. DOI: <http://dx.doi.org/10.25607/OBP-718>
- Scranton Mary I., Gordon T. Taylor, Robert C. Thunell, Frank E. Muller-Karger, Yrene Astor, Peter Swart, Virginia P. Edgcomb, and Maria G. Pachiadaki. 2020. Anomalous  $\delta^{13}\text{C}$  in Particulate Organic Carbon POC at the chemoautotrophy maximum in the Cariaco Basin. *JGR Biogeosciences*. Volume 125, Issue 2. <https://doi.org/10.1029/2019JG005276>.
- Whitt, Christopher John, Malayath Aravindakshan Atmanand, Frank Caimi, Andrea Copping, Bilal Fiaz, René Garello, Ludovic Grosjean, Ananya Sen Gupta, Malcolm Heron, Siri Johda Khalsa, William Kirkwood, Marco Lanzagorta, Shyam Madhusudhana, Alain Maguer, Andreas Marouchos, Maurizio Migliaccio, Frank Edgar Muller-Karger, Vedachalam Narayanaswamy, Jay S Pearlman, Brian Polagye, Satinder Singh, Sikandra Singh, Heather Spence, R Venkatesan. 2020 (Accepted). Future Vision for Autonomous Ocean Observations. *Frontiers in Marine Science*, Ocean Observation. doi: 10.3389/fmars.2020.00697.

- Bax, Nicholas J, Patricia Miloslavich, Frank Edgar Muller-Karger, Valerie Allain, Ward Appeltans, Sonia Dawn Batten, Lisandro Benedetti-Cecchi, Pier Luigi Buttigieg, Sanae Chiba, Daniel Paul Costa, J. Emmett Duffy, Daniel C. Dunn, Craig Richard Johnson, Raphael M Kudela, David Obura, Lisa-Maria Rebelo, Yunne-Jai Shin, Samantha Elisabeth Simmons and Peter Lloyd Tyack. 2019. A response to scientific and societal needs for marine biological observations. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2019.00395>
- Bax, Nicholas J, Patricia Miloslavich, Frank Edgar Muller-Karger, Valerie Allain, Ward Appeltans, Sonia Dawn Batten, Lisandro Benedetti-Cecchi, Pier Luigi Buttigieg, Sanae Chiba, Daniel Paul Costa, J. Emmett Duffy, Daniel C. Dunn, Craig Richard Johnson, Raphael M Kudela, David Obura, Lisa-Maria Rebelo, Yunne-Jai Shin, Samantha Elisabeth Simmons and Peter Lloyd Tyack. 2019. Corrigendum: A Response to Scientific and Societal Needs for Marine Biological Observations. <https://doi.org/10.3389/fmars.2019.00643>
- Bosquilia, Raoni W.D., Christopher M.U. Neale, Sergio N. Duarte, Solon J. Longhi, Silvio F. de B. Ferraz, Frank E. Muller-Karger. Evaluation of evapotranspiration variations according to soil type using multivariate statistical analysis. *Geoderma*. Volume 355, 113906. <https://doi.org/10.1016/j.geoderma.2019.113906>
- Canonico, Gabrielle; Pier Luigi Buttigieg, Enrique Montes, Carol A, Stepien, Dawn Wright, Abigail Benson, Brian Helmuth, Mark John Costello, Frank Edgar Muller-Karger, Isabel Sousa Pinto, Hanieh Saeedi, Jan A Newton, Ward Appeltans, Nina Bednaršek, Levente Bodrossy, Benjamin Dale Best, Angelika Brandt, Kelly Goodwin, Katrin Iken, Antonio Marques, Patricia Miloslavich, Martin Ostrowski, Woody Turner, Eric 'Pieter Achterberg, Tom Barry, Omar Defeo, Gregorio Bigatti, Lea-Anne Henry, Berta Ramiro Sanchez, Pablo Durán Muñoz, MARIA MAR SACA CUADRADO, Telmo Morato, Murray Roberts, Ana Garralda Garcia-Alegre and Bramley J. Murton. 2019. Global Observational Needs and Resources for Marine Biodiversity. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2019.00367>
- Duffy, J. Emmett, Lisandro Benedetti-Cecchi, Joaquin A. Trinanes, Frank Edgar Muller-Karger, Rohani Ambo-Rappe, Christoffer Boström, Alejandro H. Buschmann, Jarrett Byrnes, Robert G Coles, Joel Creed, Leanne Cullen-Unsworth, Guillermo Diaz-Pulido, Carlos M. Duarte, Graham J. Edgar, Miguel Dino Fortes, Gustavo Jorge Goni, Chuanmin Hu, Xiaoping Huang, Catriona L. Hurd, Brenda Konar, Dorte Krause-Jensen, Kira Krumhansl, Peter Ian Macreadie, Helene Marsh, Len J. McKenzie, Nova Mieszkowska, Patricia Miloslavich, Enrique Montes, Masahiro Nakaoka, Kjell Magnus Norderhaug, Lina M. Nordlund, Robert J. Orth, Anchana Prathep, Nathan Freeman Putman, Jimena Samper-Villarreal, Ester A Serrao, Fred Short, Isabel Sousa Pinto, Peter David Steinberg, Rick Stuart-Smith, Richard K.F. Unsworth, Mike van Keulen, Brigitta Ine Van Tussenbroek, Mengqiu Wang, Michelle Waycott, Lauren V. Weatherdon, Thomas Wernberg and Siti Maryam Yaakub. 2019. Toward a coordinated global observing system for seagrasses and marine macroalgae. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2019.00317>
- Fennel, Katja, Simone Alin, Leticia Barbero, Wiley Evans, Timothée Bourgeois, Sarah Cooley, John Dunne, Richard A. Feely, Jose Martin Hernandez-Ayon, Xiping Hu, Steven Lohrenz, Frank Muller-Karger, Raymond Najjar, Lisa Robbins, Elizabeth Shadwick, Samantha Siedlecki, Nadja Steiner, Adrienne Sutton, Daniela Turk, Penny Vlahos, and Zhaohui Aleck Wang. 2019. Carbon cycling in the North American coastal ocean: A synthesis, *Biogeosciences Discuss*. <https://doi.org/10.5194/bg-2018-420>
- Gomez, F.A., Lee, S., Hernandez, F.J., Chiaverano, L.M., Muller-Karger, F.E. Liu Y., and Lamkin, J.T. 2019. ENSO-induced co-variability of Salinity, Plankton Biomass and Coastal Currents in the Northern Gulf of Mexico. *Sci Rep* 9, 178. doi:10.1038/s41598-018-36655-y
- Goodwin, Kelly Dee, Frank Edgar Muller-Karger, Anni Djurhuus, Lisa Zeigler Allen, Andrew E. Allen, John P. McCrow, and Gabrielle Canonico Hyde. 2019. Chapter 32. Molecular Approaches for an Operational Marine Biodiversity Observation Network. *In: World Seas: An Environmental Evaluation*, Vol. III: Ecological Issues and Environmental Impacts. 2nd Edition. Charles Sheppard (editor).
- Jetz, W., McGeoch, M.A., Guralnick, R., Ferrier, S., Beck, J., Costello, M.J., Fernandez, M., Geller, G.N., Keil, P., Merow, C., Meyer, C., Muller-Karger, F.E., Pereira, H.M., Regan, E.C.,

- Schmeller, D.S., Turak, E. 2019. Essential biodiversity variables for mapping and monitoring species populations. *Nature Ecology & Evolution*. 3, p. 539–551. Doi: 10.1038/s41559-019-0826-1.
- Laureano-Rosario, A.E., Duncan, A.P., Symonds, E.M., Savic, D.A., and Muller-Karger, F.E. 2019. Predicting culturable enterococci exceedances at Escambron Beach, San Juan, Puerto Rico using satellite remote sensing and Artificial Neural Networks. *Journal of Water and Health*. 17 (1): 137-148. <https://doi.org/10.2166/wh.2018.128>
- Le Hénaff, Matthieu, Frank E. Muller-Karger, Vassiliki H. Kourafalou, Daniel Otis, Kimberley A. Johnson, Lucas McEachron, and HeeSook Kang. 2019. Coral Mortality Event in the Flower Garden Banks of the Gulf of Mexico in July 2016: Local Hypoxia due to Cross-Shelf Transport of Coastal Flood Waters? *Continental Shelf Research*. Volume 190, 103988. <https://doi.org/10.1016/j.csr.2019.103988>
- Lorenzoni, Laura, et al., 2019. From land to the ocean: the interplay between allochthonous and autochthonous contribution to particles in nepheloid layers of the Cariaco Basin, Venezuela. *Journal of Geophysical Research - Biogeosciences*. Volume 124, Issue 11. Pages: 3189-3683. <https://doi.org/10.1029/2019JG005288>.
- Muller-Karger, Frank E., Yrene M. Astor, Claudia R. Benitez-Nelson, Kristen N. Buck, Kent A. Fanning, Laura Lorenzoni, Enrique Montes, Digna T. Rueda-Roa, Mary I. Scranton, Eric Tappa, Gordon T. Taylor, Robert C. Thunell, Luis Troccoli, and Ramon Varela. 2019. The Scientific Legacy of the CARIACO Ocean Time-Series Program. *Annu. Rev. Mar. Sci.* 2019. 11. <https://doi.org/10.1146/annurev-marine-010318-095150>.
- Obura DO, Aeby G, Amornthammarong N, Appeltans W, Bax N, Bishop J, Brainard RE, Chan S, Fletcher P, Gordon TAC, Gramer L, Gudka M, Halas J, Hendee J, Hodgson G, Huang D, Jankulak M, Jones A, Kimura T, Levy J, Miloslavich P, Chou LM, Muller-Karger F, Osuka K, Samoily M, Simpson SD, Tun K and Wongbusarakum S (2019) Coral Reef Monitoring, Reef Assessment Technologies, and Ecosystem-Based Management. *Front. Mar. Sci.* 6:580. doi: 10.3389/fmars.2019.00580
- Otis, Daniel B., Matthieu Le Hénaff, Vassiliki H. Kourafalou, Lucas McEachron, and Frank E. Muller-Karger. 2019. Mississippi River and Campeche Bank (Gulf of Mexico) Episodes of Cross-Shelf Export of Coastal Waters Observed with Satellites. *Remote Sensing*. 2019, 11(6), 723; <https://doi.org/10.3390/rs11060723>.
- Pearlman, Jay S, Mark Bushnell, Laurent Coppola, Pier Luigi Buttigieg, Francoise Pearlman, Pauline Simpson, Michele Barbier, Johannes Karstensen, Frank Edgar Muller-Karger, Christian Munoz-Mas, Peter Pissierssens, Cynthia L Chandler, Juliet Hermes, Emma Heslop, Reyna Jenkyns, Eric 'Pieter Achterberg, Manuel Bensi, Henry Bittig, Jerome Blandin, Julie A. Bosch, Bernard Bourlès, Roberto Bozzano, Justin James Henry Buck, Eugene Francis Burger, Daniel Cano, Vanesa Cardin, Miguel Charcos Llorens, Andres Cianca, Chen Hua, Caroline Cusack, Eric Delory, Rene Garello, Gabriele Giovanetti, Valerie Harscoat, Robert Heitsenrether, Simon Jirka, Ana Lara-Lopez, Nadine Lanteri, Adam Marc Leadbetter, Giuseppe M.R. Manzella, Joan Masó, Andrea Mccurdy, Eric Moussat, Manolis Ntoumas, Sara Pensieri, George Petihakis, Nadia Pinardi, Sylvie Pouliquen, Rachel Przeslawski, Nicholas Roden, Joe Silke, Mario Tamburri, Hairong Tang, Toste Tanhua, Pierre Testor, Julianna O Thomas, Christoph Waldmann, Fred Whoriskey. 2019. *Evolving and Sustaining Ocean Best Practices and Standards for the Next Decade*. Edited by: Hervé CLAUSTRÉ. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2019.00277>
- Ramirez-Reyes, Carlos, Kate A. Brauman, Rebecca Chaplin-Kramer, Gillian L. Galford, Susana B. Adamo, Christopher B. Anderson, Clarissa Anderson, Ginger R.H. Allington, Kenneth J. Bagstad, Michael T. Coe, Anna F. Cord, Laura E. Dee, Rachelle K. Gould, Meha Jain, Virginia A. Kowal, Frank E. Muller-Karger, Jessica Norriss, Peter Potapov, and T. Maxwell Wright. 2019. Reimagining the Potential of Earth Observations for Ecosystem Services Assessments. *Science of the Total Environment*. Volume 665, 15 May 2019, Pages 1053-1063. <https://doi.org/10.1016/j.scitotenv.2019.02.150>.
- Sathyendranath, Shubha, Robert J.W. Brewin, Carsten Brockmann, Vanda Brotas, Ben Calton, Andrei Chuprin, Paolo Cipollini, André B. Couto, James Dingle, Roland Doerffer, Craig Donlon, Mark Dowell, Mike Grant, Steve Groom, Andrew Horseman, Thomas Jackson, Hajo Krasemann, Samantha Lavender, Constant Mazeran, Victor Martinez-Vicente, Frédéric Mélin,

- Timothy S. Moore, Dagmar Müller, Peter Regner, Shovonlal Roy, Chris Steele, François Steinmetz, John Swinton, Malcolm Taberner, André Valente, Marco Zühlke, Vittorio Brando, Hui Feng, Gene Feldman, Bryan, A. Franz, Robert Frouin, Richard, W. Gould, Jr, Stanford B. Hooker, Mati Kahru, Susanne Kratzer, B. Greg Mitchell, Frank Muller-Karger, Heidi Sosik, Kenneth J. Voss, Jeremy Werdell, Trevor Platt. 2019 (in press). An OceanColour Time Series for Use in Climate Studies: The Experience of the Ocean-Colour Climate Change Initiative (OC-CCI). *Sensors*. 19(19), 4285; <https://doi.org/10.3390/s19194285>.
- Singh, A. A., Maharaj, A., Kumar, M., Singh, P., Singh, S., Muller, F., McCarthy, M., Joseph, L., Damlamian, H., Begg, Z., 2019. Developing High Resolution Baseline Coast Resource Maps Using World View 2 Imagery for a Coastal Village in Fiji. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2019.00207>.
- Smail, Emily A., Paul M. DiGiacomo, Sophie Seeyave, Samy Djavidnia, Louis Celliers, Pierre-Yves Le Traon, Jeremy Gault, Elva Escobar-Briones, Hans-Peter Plag, Christine Pequignet, Lenore Bajona, Li Zhang, Jay Pearlman, Andy Steven, Jonathan Hodge, Marie-Fanny Racault, Curt Storlazzi, William Skirving, Ron Hoeke, John Marra, Ap van Dongeren, Frank Muller-Karger, Douglas Cripe & Daniel Takaki. 2019. An introduction to the 'Oceans and Society: Blue Planet' initiative, *Journal of Operational Oceanography*, DOI: 10.1080/1755876X.2019.1634959.
- Speich, Sabrina, Tong Lee, Frank Edgar Muller-Karger, Laura Lorenzoni, Ananda Pascual, Di Jin, Eric Delory, Gilles Reverdin, John Siddorn, Marlon R Lewis, Nuria Marba, Pier Luigi Buttigieg, Sanae Chiba, Justin Manley, Amos Tierayangn Kabo-Bah, Kruti Desai, Abby Ackerman. 2019. OceanObs19: An Ocean of Opportunity. *Frontiers Marine Science*. <https://doi.org/10.3389/fmars.2019.00570>
- Torres, Hannah R., Catherine J. Reynolds, Anna Lewis, Frank Muller-Karger, Kamal Alsharif, Katie Mastenbrook. 2019. Examining Youth Perceptions and Social Contexts of Litter to Improve Marine Debris Environmental Education. *Environmental Education Research*. DOI: 10.1080/13504622.2019.1633274.
- Valente, André, Shubha Sathyendranath, Vanda Brotas, Steve Groom, Michael Grant, Malcolm Taberner, David Antoine, Robert Arnone, William M. Balch, Kathryn Barker, Ray Barlow, Simon Bélanger, Jean François Berthon, Sükrü Beşiktepe, Yngve Borsheim, Astrid Bracher, Vittorio Brando, Elisabetta Canuti, Francisco Chavez, Andrés Cianca, Hervé Claustre, Lesley Clementson, Richard Crout, Robert Frouin, Carlos García-Soto, Stuart W. Gibb, Richard Gould, Stanford B. Hooker, Mati Kahru, Milton Kampel, Holger Klein, Susanne Kratzer, Raphael Kudela, Jesus Ledesma, Hubert Loisel, Patricia Matrai, David McKee, Brian G. Mitchell, Tiffany Moisan, Frank Muller-Karger, Leonie O'Dowd, Michael Ondrusek, Trevor Platt, Alex J. Poulton, Michel Repecaud, Thomas Schroeder, Timothy Smyth, Denise Smythe-Wright, Heidi M. Sosik, Michael Twardowski, Vincenzo Vellucci, Kenneth Voss, Jeremy Werdell, Marcel Wernand, Simon Wright, and Giuseppe Zibordi. 2019. A compilation of global bio-optical in situ data for ocean-colour satellite applications – version two. *Earth System Science Data*. DOI: 10.5194/essd-11-1037-2019
- Yurganov, Leonid; Frank Muller-Karger, Ira; Leifer. 2019. Methane emission from Arctic seas in winter stimulated by enhanced mixing of seawater: satellite data. *Advances in Polar Science*. 30, 4. pp. 382-390. DOI: 10.13679/j.advps.2019.0024.

## 2018

- Bax, Nicholas J, Ward Appletans, Russell Brainard, J. Emmett Duffy, Piers Dunstan, Quentin Hanich, Harriet Harden Davies, Jeremy Hills, Patricia Miloslavich, Frank Edgar Muller-Karger, Samantha Simmons, O. Aburto-Oropeza, Sonia Batten, Lisandro Benedetti-Cecchi, David Checkley, Sanae Chiba, Albert Fischer, Melissa Andersen Garcia, John Gunn, Eduardo Klein, Raphael M Kudela, Francis Marsac, David Obura, Yunne-Jai Shin, Bernadette Sloyan, Toste Tanhua, and John Wilkin. 2018. Linking capacity development to monitoring networks to achieve sustained ocean observation. *Frontiers in Marine Science*, section Ocean Observation. Perspective. <https://doi.org/10.3389/fmars.2018.00346>.
- Benson, Abigail, Cassandra Brooks, Gabrielle Canonico, J. Emmett Duffy, Frank Edgar Muller-Karger, Heidi M. Sosik, Patricia Miloslavich, Eduardo Klein. 2018. Integrated observations and informatics improve understanding of changing marine ecosystems. *Frontiers in Marine Science*, section Ocean Observation. <https://doi.org/10.3389/fmars.2018.00428>.

- Boss, E., et al. 2018. Beyond chlorophyll fluorescence: The time is right to expand biological measurements in ocean observing programs. *Limnology and Oceanography Bulletin*. DOI: - 10.1002/lob.10243.
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- Santamaría-del-Angel E., S. Alvarez-Borrego y F.E. Muller-Karger. 1995. Regiones Biogeográficas del Golfo de California basadas en las imágenes del Coastal Zone Color Scanner. pags. 63-84 en Temas de Oceanografía Biológica en México. González-Farías F. y J. De -la-Rosa (eds). Ed. SEP-UABC Mexicali 288 p.

#### 1994

- Abbott, M. R., O. B. Brown, R. H. Evans, H. R. Gordon, K. L. Carder, F. E. Muller-Karger, and W. E. Esaias. 1994. Ocean Color in the 21<sup>st</sup> Century: A Strategy for a 20-Year Time Series. SeaWiFS Technical Report Series. NASA Technical Memorandum 104566; Vol. 17. 20 pp.
- Muller-Karger, F. E., and R. Aparicio. 1994. Mesoscale Processes Affecting Phytoplankton Abundance in the Southern Caribbean Sea. Continental Shelf Research. Continental Shelf Research. (14:2/3). 199-221.

#### 1987

- Banse, K., C. R. McClain, W. E. Esaias, and F. Muller-Karger. 1987. Satellite-observed winter blooms of phytoplankton in the Arabian Sea. In: International Conference on Marine Biology of the Indian Ocean, 1986. (M. F. Thompson and N. M. Tirmizi). Am. Inst. Biol. Sci., Washington, DC.
- Carton, J. A., and F. Muller-Karger. 1987. Bibliography of the physical and biological oceanography of the tropical Atlantic Ocean. University of Maryland, College Park, Department of Meteorology. Report 87-26. 28 pp.
- Muller-Karger, F. E., C. R. McClain, and G. C. Ray. 1987. Primary Productivity. Chapter in the Strategic Atlas of Economic Resources of the Bering Sea. NOAA Strategic Assessment Branch, Rockville, MD.

## **VI. Professional Activity/Service:** (2015-present)

University of South Florida

-President's Task Force: Values, Vision, Mission and Goals (2017-2018)

College of Marine Science:

-Dean's Advisory Council (2020-)

-Tenure and Promotion Committee (ongoing)

-Co-director, A.P. Sloan Foundation Univ. Center of Exemplary Mentoring (UCEM) (2012-2020)

-Faculty Mentor for Drs. Cam Ainsworth and Chris Stallings (2013-present)

The Oceanography Society (TOS), Justice, Equity, Diversity, and Inclusion Committee (2020-)

Intergovernmental Oceanographic Commission (IOC/UNESCO):

Ocean Best Practices System Steering Committee (2018-)

Global Ocean Observing System (GOOS) Bio-Eco Panel (2017-)

Integrated Marine Biosphere Research (IMBeR/SCOR) Scientific Steering Committee (2017/2020)

Co-Chair, Marine Biodiversity Observing Network (MBON), Group on Earth Observations (2016-)

Member, Implementation Committee, Group on Earth Observations Biodiversity Observing Network (GEO BON)(2016-)

Member, External Advisory Board to the Department of Biology, Ecology and Conservation of St.

George's University, Grenada (2020-)

Guest Editor, Frontiers in Marine Science (2017-)

OceanObs'19 (Decadal Conference) Program Committee (2017-2020)

Interamerican Institute for Global Change Research – Chair, Sci. Advisory Committee (2008-2016)

Board Trustee, The Northstar Learning Center, New Bedford, Massachusetts (2008/-)

Editorial Board, Memoria, Journal, Fundación La Salle de Ciencias Naturales de Venezuela (2000-)

Member, IGMETS, Intergovernmental Oceanographic Commission/UNESCO (2014-)

Member, NASA Ocean Biology and Biogeochemistry Strategic Planning Working Group (2015-2018)

Member, NASA Biodiversity and Ecological Forecasting Strategic Planning Group (2019-)

Ongoing:

Reviewer of scientific proposals and panel member for NASA, NOAA, NSF, Florida Space Grant Consortium, Environmental Protection Agency, ONR, NOPP

Reviewer of scientific proposals and organizer for the Interamerican Institute for Global Change (IAI) (2008-2016).

Reviewer of scientific manuscripts for the AGU Global Biogeochemical Cycles.

Reviewer of scientific manuscripts for the AGU Journal of Geophysical Research.

Reviewer of scientific manuscripts for the AGU Geophysical Research Letters.

Reviewer of scientific manuscripts for the Journal of Remote Sensing of the Environment.

Reviewer of scientific manuscripts for the Journal of Continental Shelf Research.

Reviewer of scientific manuscripts for the Boletín Oceanográfico de la Universidad de Oriente.

Reviewer of scientific manuscripts for the J. of the Institute of Marine Affairs, Trinidad & Tobago.

Reviewer of scientific manuscripts for the magazine Oceanography (The Oceanography Society).

Reviewer of scientific manuscripts for the Marine Technology Society.

## **VII. Research and sea-going experience:**

Experience using a wide variety of remote sensing, as well as field biological, geological, chemical, and physical oceanographic equipment. Familiar with stable (nitrogen) and radioactive (carbon) isotope techniques in phytoplankton work. Participated in upwards of 40 cruises in tropical to high latitude environments.

## **VIII. Special skills:**

Team leadership

Languages: Spanish, German, English  
 SCUBA (Advanced Open Water, Rescue training, DAN O2)  
 Methods for wet nutrient chemistry  
 Methods for autoanalyzer nutrient chemistry  
 Productivity assays (<sup>14</sup>C and <sup>15</sup>N isotopes)  
 Computer systems and basic network management  
 Satellite and ground-based remote sensing (VIS, IR)

**IX. Professional Interests and Expertise:**

Interdisciplinary Earth science and Earth observation,  
 Oceanography, coastal and estuarine science,  
 Satellite oceanography and remote sensing,  
 Science education and strategic planning for formal/informal public education,  
 Integration of science, management and education,  
 Ocean Policy

**X. Professional Awards, Honors, and Scholarships:**

2019 Best Paper Award for Interdisciplinary Applications. Lead Author: Dr. Chuanmin Hu.  
 "Remote sensing estimation of surface oil volume during the 2010 Deepwater Horizon  
 oil blowout in the Gulf of Mexico: scaling up AVIRIS observations with MODIS  
 measurements". Journal of Applied Remote Sensing (JARS).  
 2019 AAAS Fellow; Council of the American Association for the Advancement of Science  
 2019 University of South Florida: Outstanding Faculty Award  
 2016 National Oceanographic Partnership Program 2016 Excellence in Partnering Award for  
 leading the *National Marine Sanctuaries as Sentinel Sites for a Demonstration Marine  
 Biodiversity Observation Network (MBON)*  
 2015 University of South Florida: Faculty Outstanding Research Achievement Award  
 2014 Group Achievement award: CARIACO Ocean Time Series Project selected as highlight  
 for the Roger Revelle Memorial Lecture (Executive Council of the Intergovernmental  
 Oceanographic Commission of UNESCO; 1 July 2014)  
 2013 Group Achievement Honor Award, NASA Ames Research Center  
 2013 Secondary Business Partner of the Year, Hillsborough County Public Schools  
 2011 Gulf Guardian Award, EPA Gulf of Mexico Program.  
 2008 "Most cited paper" mention, Continental Shelf Research, for 2005 Astor et al. paper  
 2006 USF Million Dollar Researcher President's award  
 2005 Julius A. Stratton Award for Leadership, awarded to members of the U.S. Commission  
 on Ocean Policy (Coastal Zone 2005 meeting)  
 2004 Acknowledgement for service on the U.S. Commission on Ocean Policy by Senator E.  
 Hollings. Congressional Record. Proceedings and Debates of the 108<sup>th</sup> Congress,  
 Second Session. Vol 150. No. 89.  
 2004 Admiral James D. Watkins Award for Contributions to Ocean Research and Education,  
 Consortium for Oceanographic Research and Education (CORE)  
 2004 Gulf Guardian Award (EPA Gulf of Mexico Program)  
 2003 University of South Florida President's Award for Faculty Excellence  
 2001/2004 Commissioner, U.S. Commission on Ocean Policy, nominated and appointed by  
 President George W. Bush

**XI. Member:**

AGU, ASLO, The Oceanography Society, AAAS, Fundación La Salle de Ciencias Naturales de  
 Venezuela (FLASA; Founding Member)

**XII. Grants and Contracts:**



Grants/contracts received from NSF, NASA, NOAA, EPA, ONR, USGS, MMS, The State of Florida, The Ocean Conservancy, others.

**2004-2020 Funded Projects:** (Not a complete list)

- NSF (2018 - 2022) OceanObs Research Coordination Network. FMK PI, J. Pearlman co-PI
- NSF (2014 - 2019) The Cariaco basin oceanographic time series program. FMK PI, Co-Is: Y Astor, M. Scranton, G. Taylor, R. Thunell, and K. Fanning.
- NSF (2013-2019) Belmont Forum Grant: METROPOLE: An Integrated Framework to Analyze Local Decision Making and Adaptive Capacity to Live With Large-Scale Environmental Change: Community Case Studies in Brazil, UK and the US. FMK PI, Co-I's: Mark Pelling (UK), Jose Marengo (Brazil), Sam Merrill (USA).
- NSF (2012-2019) Partnerships in International Research and Education (PIRE): Context Sensitive Implementation of Synergistic Water-Energy Systems. PI. James Mihelcic (USF), FMK co-I.
- NSF (1995 - 2013) The Cariaco basin oceanographic time series program. FMK PI, present Co-Is: R. Varela, Y Astor, M. Scranton, G. Taylor, R. Thunell, and K. Fanning.
- NSF (2010-2012) EAR-1043323 CCEP: Coastal Areas Climate Change Education (CACCE) Partnership. PI: Jeff Ryan (USF Geology). FMK co-I.
- NASA/NOAA (2019-2022) South Florida Marine Biodiversity Observation Network (MBON). FMK PI, co-I: Enrique Montes (USF), Steve Gittings (National Marine Sanctuaries Office), Maria Kavanaugh (Oregon State University).
- NASA/NOAA (2014-2019) National Marine Sanctuaries as Sentinel Sites for a Demonstration Marine Biodiversity Observation Network (MBON). FMK PI, co-I: Francisco Chavez (MBARI), Enrique Montes (USF), Steve Gittings (National Marine Sanctuaries Office), Scott Doney (WHOI), Maria Kavanaugh (Oregon State University).
- NASA (2018-2020) Laying the foundations of the Pole-to-Pole of the Americas Marine Biodiversity Observation Network: methodologies, capacity-building, and data sharing for biological observations across the Americas (PI: Enrique Montes)
- NASA (2018-2020)(Via Oregon State University) Dynamic Seascapes to Form a Biogeographic Framework of a Global Marine Biodiversity Observing Network (PI: Maria Kavanaugh)
- NASA (2017-2019)(Via North Carolina State University) From Arboreal to Benthic Communities: the ABCs of Land to Ocean Biodiversity Observations. PI: Erin Hestir.
- NASA (2015-2018) Evaluating water quality and tropical vector-borne disease risk by satellite remote sensing (NESSF Fellowship to Doctoral student, Abdiel Laureano-Rosario).
- NASA (Via ROFFS, Inc./PI; 2011-2015) Management and conservation of Atlantic bluefin tuna (*Thunnus thynnus*) and other highly migratory fish in the Gulf of Mexico under IPCC climate change scenarios: A study using regional climate and habitat models.
- NASA (11/1/2009-10/31/2016). Decision Support System for Ecosystem-Based Management of Tropical Coral Reef Environments.
- NASA (2014-2016). Florida Space Grant Consortium: Unlocking Earth's Secrets from Space; Education collaboration with Stewart Middle School, Tampa.
- NASA An assessment of global organic carbon flux along continental margins. Co-I with C. Hu
- NASA The mapping and monitoring of change in the Florida Keys reef tract from space using L7 and MODIS. Co-I with D. Palandro.
- NASA A millennium global scale coral reef ecosystem assessment using high resolution remote sensing data. Co-I with S. Andrefouet and C. Hu
- NASA Impact of large and small rivers on adjacent oceanic environments. Co-I with C. Hu
- NASA EAGLE-EYE: Ecological Assessments of Generalized Littoral Environments – an Integrated EOS DB/Real-time MODIS Science Applications Project. Co-I with C. Hu
- NASA: Collaborative Research with the NASA Marshall Space Flight Center.
- NASA Collaborative effort with ROFFS, Inc. Study of Bluefin Tuna larvae distribution in the Gulf of Mexico. (Through 2011)
- NASA Collaborative effort with Roff's, Inc. Study of ocean environmental parameters to forecast the effects of climate variability on pelagic fish.

NASA	Phytoplankton hyperspectral signatures from aerial and undersea high temporal and spectral resolution measurements: GeoCape Science Program Requirements.
NASA	Environmental Assessments of Coral Reef Ecosystems: Interdisciplinary Research; Co-I with S. Andrefouet (IRD, New Caledonia, France)
NOAA	RESTORE (2016-2019) (via University of Miami) Evaluation of GoM oceanic observation networks, impact assessment on ecosystem management and recommendations (PI: Matthieu LeHenaff)
NOAA	(2013-2016) Clean Community-Clean Coast Proposal. Marine Debris Program.
NOAA	(2017-2021) Gulf of Mexico Coastal Ocean Observing System (GCOOS) Graduate Student Support
NOAA	(2012 – 2021) Gulf of Mexico Coastal Ocean Observing System (GCOOS) Remote Sensing in support of GCOOS activities
NOPP	(2014-2018) National Marine Sanctuaries as Sentinel Sites for a Demonstration Marine Biodiversity Observation Network (MBON). NOAA/NASA/BOEM.
EPA	US-Mexico Binational Red Tide Program. Gulf of Mexico Program Office.
EPA	(2012-2016) Ecological Assessment of Generalized Littoral Environments Decision-Support System (EAGLE/DS). Extreme Event Impacts on Air Quality and Water Quality with a Changing Global Climate; EPA-G2011-STAR-D1.
Exxon	Gulf of Mexico Environmental Change Assessment
I-4 Corridor	Tech Support for Improving the NOAA NMFS and ICCAT Atlantic Bluefin Tuna Fisheries Management Decision Support System.
BP/FIO	Gulf Oil Spill Prevention, Response, and Recovery Grant. Early Warning 4-D Remote Sensing System to Assess Synoptic Threats to Coastal Ecosystems of Florida and of Adjacent States and Nations.
FSRI	Florida Space Research Institute; Coastal remote sensing with the Space Station; Co-I with C. Hu
NOPP	Influence of Oceanographic and Biological Processes on the Distribution of Cetaceans (D. Mann, PI; FMK co-I)
ONR	University of North Carolina; SEA-COOS remote sensing component. Co-I with C. Hu and R. Weisberg.
ONR	Construction and Deployment of an Underwater Optical Micrometer
State of FL	Geospatial Assessment of Marine Environments (GAME); Defining coastal bioregions of Florida. Co-I with J. Ogden and H. Norris.
U. Fiji	University of Fiji (2014-2019) via the Pacific-American Foundation/PACAM, US AID funding) Developing the Capacity to Generate Coastal and Shallow-Water Basemaps for Tropical Island Nations and Territories of the Pacific.
USGS	Use of remote sensing satellites to monitor sediment plumes in the Mississippi bight; Co-I with C. Hu
USGS	Use of remote sensing to monitor water clarity and sediment dynamics in the Chesapeake Bay. Co-I with C. Hu