

KARL HEINZ SZEKIELDA



Degree: Docteur de l'Université d'Aix-Marseille, France

Fulbright Specialist at the Ateneo de Manila University 2019. Fulbright Scholar Award in teaching and research at the University of the Bahamas 2017-2018. USAID Science, Technology, Research and Innovation for Development Project (2016) and US Fulbright Specialist (2012 and 2015) at the Ateneo de Manila University.

Specialty:

Oceanography, coastal environment, eutrophication, remote sensing of coastal environment

Teaching and research as Adjunct Professor at City University of New York (CUNY) Hunter College, NOAA's Cooperative Remote Sensing Science and Technology Center, CCNY'S Department of Electrical Engineering, CUNY (2000-2003), Marine Science of Long Island University (LIU), Southampton (2001), School of Continuing and Professional Studies of New York University (NYU) (1999-2001), Department of Physics, LIU Brooklyn (1998); honorary Visiting Professor at Academia Sinica in Beijing (1988) and Visiting Full Professor, University of Hamburg (1976-1978), Assistant Professor in the College of Marine Studies, University of Delaware (1971-1975). Conducted international seminars in Berlin, Beijing, Buenos Aires and Warsaw while with the United Nations. Main areas of teaching are in marine and coastal environment and management, small island developing states, environmental hazards, international pollution issues, sustainable development and environment, remote sensing of the earth with emphasis on the oceans.

AWARDS:

Fulbright Specialist: Ateneo de Manila University, Philippines, November 22 to December 18, 2019, with invited lectures on: Environmental Management for Sustainability, Introduction to Environmental Science and Environmental Pollution. Public presentation: Fluctuations of the Marine Environment around the Philippines. Panelist: International Centre for Theoretical Physics (ICTP)/ Ateneo de Manila University, International Workshop on Distilling Climate Information for Sectoral Applications, December 9-14, 2019

Fulbright Scholar: University of the Bahamas, August 20 2017 to November 24, 2017; January 7 to March 31, 2018.

Fulbright Specialist: Ateneo de Manila University, Philippines, August 22 to October 3, 2015. June 15 to July 31, 2012.

USAID STRIDE: Visiting Professor, Ateneo de Manila University, Philippines, June 2016.

OFFICE OF NAVAL RESEARCH: as Senior Faculty Fellow at the Naval Research Laboratory, Washington, D.C, carried out analysis of hyper-spectral data obtained from aircraft and satellite altitudes over the oceans, monitoring spatial and temporal events, summers, 2006-2010.

CUNY: Research Foundation: Suffolk County Department of Health: Principal Investigator for study on brown tides, 2006-2008. Anastasia Van Burkalow Distinguished Service Award, 2004.
NOAA CREST research focused on remote sensing of coastal environment and detection of photosynthetic pigments and harmful algae blooms, 2000-2003.
National Academy of Science/NRC: Fellow under NASA's Goddard Space Flight Center.

INTERNATIONAL AFFAIRS:

United Nations Headquarters, New York (1974-76; 1978-1996), as chief of section and later as head of branch, carried out technical assistance programs on natural resources development, remote sensing and on outer space matters in cooperation with various governments. In 1996 was Chief of Branch in the Environment and Natural Resources Management Division of the Economic Commission for Southeast Asia and the Pacific (ESCAP), Bangkok.

PUBLICATIONS:

Book: *Satellite Monitoring of the Earth*, John Wiley and Sons, Inc. New York, 1988.

Edited:

Satellite Remote Sensing for Resources Development, Graham and Trotman, Ltd., London, 1986, 221 pp., with contribution on General Aspects of the use of Satellite Remote Sensing for Resources Exploration in Developing Countries, 1-21.

Interregional Seminar on Development and Management of Resources of Coastal Areas, with B. Breuer, co-editor, UN and the German Foundation for International Development, Berlin (West), 1976, 546 pp., with contribution on Coastal Mapping from Satellite Altitudes, 457-468.

Publications, solo-authored, first-authored and refereed:

Environmental changes in the South China Sea 2020. *International Journal of Geology, Earth & Environmental Sciences* 10(2), 8-22. ISSN: 2277-2081.

Salinity fluctuations around New Providence Island in response to Hurricane Irene. K. H. Szekiolda, V. Toppin, J. Chisholm-Lightbourne. *Caribbean Journal of Earth Science*, Geological Society of Jamaica. July 16, 2019, 51, pp.1-6. caribjes.comCJESpdf/CJESS-1-SzekioldaSalinity.

Global Change Concerns in Small Islands with Reference to the Bahamas. *International Journal of Geology, Earth and Environmental Sciences*. September-December 2018, Vol. 8(3), 15-22, ISSN: 2277-2081.

Environmental Concerns in Small Islands with Reference to the Philippines. *International Journal of Geology, Earth and Environmental Sciences*. September-December 2017, Vol. 7(1), 17-27, ISSN: 2277-2081.

Scale of Eutrophication in Coastal Waters. *International Journal of Geology, Earth and Environmental Sciences*. September-December 2015, Vol. 5(3), 127-138, ISSN: 2277-2081.

Eutrophication of Manila Region. Karl H. Szekiolda, Emilyn Espiritu, Nofel Lagrosas. *International Journal of Geology, Earth and Environmental Sciences*. September-December 2014, Vol. 4(3), 38-50, ISSN: 2277-2081.

Heterogeneity of an Oil Spill. Karl H. Szekiolda, Karen W. Patterson, Jeffrey H. Bowles, Michael R. Corson. *International Journal of Geology, Earth and Environmental Sciences*, January-April 2014, Vol. 4 (1), 28-36, ISSN: 2277-2081.

Spatial Distribution Patterns of Chlorophyll-*a* and Suspended Matter in the Yangtze Estuary and the Hangzhou Bay as Observed with the Hyperspectral Imager for the Coastal Ocean (HICO). Karl H. Szekiolda, Wesley J. Moses, Jeffrey H. Bowles, Michael R. Corson, Ellen J. Wagner and Rong R. Li. *International Journal of Geology, Earth and Environmental Sciences*, May-August 2013, Vol. 3 (2), 63-68, ISSN: 2277-2081.

Chlorophyll Concentrations in Response to Monsoonal Changes along the West Coast of Luzon, Philippines, *International Journal of Geology, Earth and Environmental Sciences*, January-April 2013, Vol. 3 (1), 63-68, ISSN: 2277-2081.

Hyperspectral Observations of Internal Waves. Karl Szekiolda. *International Journal of Geology, Earth and Environmental Sciences*, January-April 2012, Vol. 2 (1), 79-82, ISSN: 2277-2081.

High Spatial Resolution Spectrometry of rafting macroalgae (Sargassum). Karl Szekiolda, George O. Marmorino, Jeffrey H. Bowles, David Gillis. *Journal of Applied Remote Sensing*, SPIE Digital Library, Vol. 4, 043529, 2010, 13 pp.

Patch Recognition of Algal Blooms and Macroalgae. K. H. Szekiolda, J. H. Bowles, D. B. Gillis, W. Snyder and W. D. Miller, *SPIE Proceedings*, Vol. 7678, Ocean Sensing and Monitoring II, Weilin (Will) Hou; Robert A. Arnone, Editors, 20 April 2010,

Interpretation of Absorption Bands in Airborne Hyperspectral Radiance Data. Karl Szekiolda, Jeffrey H. Bowles, David B. Gilles and W. David Miller, *Sensors*, 9 (4), 2009, 2907-2925.

Airborne hyperspectral imaging of cyanobacteria accumulations in the Potomac River, Karl Szekiolda, George Marmorino, Shelia J. Maness, Timothy Donato, Jeffrey H. Bowles, W. David Miller, W. Joseph Rhea. *Journal of Applied Remote Sensing*, vol. 1, 2007, 1-14.

Use of the first and second chlorophyll absorption bands for marine biogeochemical patch recognition. *Indian Journal of Marine Sciences*, Special Issue: Ocean Color, vol. 34 (4), December 2005, pp. 387-395.

Pattern recognition of marine provinces. *International Journal of Remote Sensing*, Vol. 26, No. 7, London, 2005, pp. 1499-1503.

Spectral Reflectance measurements of estuarine waters, with C. Gobler, F. Moshary, B. Gross and S. Ahmed, co-authors. *Ocean Dynamics*, 53, 2003, pp. 98-102.

Contributions to books/special issues:

Spatial Variability of River Plumes and Eutrophication, with D. McGinnis, co-author. In: *Biogeochemistry of Major World Rivers*, ed. by E.T. Degens et al., John Wiley and Sons, Inc., Chichester, 1991, pp. 1-24.

New Concepts in Patch Recognition of Suspended Matter in Coastal Areas, with D. McGinnis and R. Carey, co-authors. In: *Facets of Modern Biogeochemistry*, ed. by V. Ittekkot, et al., Springer Verlag, Berlin 1990, pp. 155-174.

Satellite Observations Over the North Sea, with D. McGinnis, P. Mc Clain and D. Clark, co-authors. In: *Biochemistry and Distribution of Suspended Matter in the North Sea and Implications to Fisheries Biology*, ed. by S. Kempe et al., Geological-Paleontological Institute, University of Hamburg, 1988, pp. 1-33.

Investigations with Satellites on Eutrophication of Coastal Regions, Response of the Somali Upwelling onto Monsoonal Changes. In: *Transport of Carbon and Minerals in Major World Rivers*, ed. by E.T. Degens et al., University of Hamburg, 1987, pp. 93-112.

The Changjian Regime, with D. McGinnis and E.T. Degens, co-authors. In: *Transport of Carbon and Minerals in Major World Rivers*, ed. by E.T. Degens et al., University of Hamburg, 1987, pp. 171-174.

Investigations with Satellites on Eutrophication of Coastal Regions, Part III: the Patch Concept. In: *Transport of Carbon and Minerals in Major World Rivers, Part III*, ed. by E.T. Degens et al., *SCOPE/UNEP* Special Issue, 58, University of Hamburg, 1985, pp. 33-49.

Investigations with Satellites on Eutrophication of Coastal Regions, Part IV: the Changjiang River and the Huanghai Sea, D. McGinnis, co-author. In: *Transport of Carbon and Minerals in Major World Rivers, Part III*, ed. by E.T. Degens et al., *SCOPE/UNEP* Special Issue, 58, University of Hamburg, 1985, pp. 49-85.

Eutrophication of Coastal Regions, Part V: Note on the Amazon Saltwedge. In: *Transport of Carbon and Minerals in Major World Rivers, Part III*, ed. by E.T. Degens et al., *SCOPE/UNEP* Special Issue, 58, University of Hamburg, 1985, pp. 85-91.

Large-scale Mapping of Vegetation. In: *Transport of Carbon and Minerals in Major World Rivers, Part III*, ed. by E.T. Degens et al., *SCOPE/UNEP* Special Issue, 58, University of Hamburg, 1985, pp. 91-101.

Satellite Investigations on the Dynamics of the Subtropical and Antarctic Convergence Zones, *Deutsche Hydrographische Zeitschrift*, 36, 1983, pp. 25-43.

Scales of Oceanic Parameters as Monitored From Space, *Remote Sensing Quarterly*, 2, 1980, pp. 16-35.

Investigations with Satellites on Eutrophication of Coastal Regions, Part II, D. McGinnis and R. Gird, co-authors. In *Transport of carbon and Minerals in Major World Rivers, Part II*, ed. by E.T. Degens et al., *SCOPE/UNEP Special Issue*, 55, University of Hamburg, 1983, pp. 55-84.

Turbidity Zones Over the Rio de la Plata Region as Monitored with Satellites, L. Piatti and R. Legeckis, co-authors. In: *Transport of Carbon and Minerals in Major World Rivers, Part II*, ed. by E.T. Degens et al., *SCOPE/UNEP Special Issue*, 55, University of Hamburg, 1983, pp. 183-192.

Investigations with Satellites on Eutrophication of Coastal Regions., In: *Transport of Carbon and Minerals in Major World Rivers, Part I*, ed. by E.T. Degens, *SCOPE/UNEP Special Issue*, 52, University of Hamburg, 1982, pp. 13-37.

Potential Use of Satellites for Assessing Pools and Fluxes of the Carbon Cycle. In: *The Global Carbon Cycle*, ed. by B. Bolin et al., John Wiley and Sons Inc., Chichester, 1979, pp. 379-402.

Eolian Dust Into the Northeast Atlantic. In: *Oceanography and Marine Biology: an Annual Review*, ed. by M. Barnes, Aberdeen, Aberdeen University Press, 16, 1978, pp. 11-41.

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Skylab Investigation of the Upwelling off the Northwest Coast of Africa, D. Suszkowski and P. Tabor, co-authors, *Journal du Conseil Permanent International pour l'Exploration de la Mer*, 37, 1977, pp. 205-213.

Fast Temperate Changes in the Upwelling Area Along the NW Coast of Africa, *Journal du Conseil Permanent International pour l'Exploration de la Mer*, 36, 1976, pp. 199-204.

Pattern Recognition of Suspended Material, J.T. Duvall, co-author, *Journal du Conseil Permanent International pour l'Exploration de la Mer*, 36, 1976, pp. 205-216.

Use of Satellite Data in Coastal Zone Programmes, *Ocean Management*, 3, 1976 pp. 31-56.

Chlorophyll Determination of Phytoplankton: a Comparison of *in vivo* Fluorescence with Spectrophotometric Absorption, M. Marker, co-author, *Journal du Conseil Permanent International pour l'Exploration de la Mer*, 36, 1976, pp. 217-219.

Use of Satellite Data in Coastal Zone Programmes, *Ocean Management*, 3, 1976 pp. 31-56.

Variability of Sea Surface Temperatures in the Southern Indian Ocean, W. Shenk and V.V. Salomonson, co-authors, *Journal du Conseil Permanent International pour l'Exploration de la Mer*, 35, 1974, pp. 143-148.

Heterogeneities in Salinity in a River Plume, with S. Kupferman, co-author, *Estuarine and Coastal Marine Science*, I, 1973, pp. 419-424.

Validity of Ocean Surface Temperatures Monitored from Satellites, *Journal du Conseil Permanent International pour l'Exploration de la Mer*, 35, 1973, pp. 78-86.

A Multichannel Approach to Monitor Sea Surface Temperature from Space Along the Northwest Coast of Africa, *Journal du Conseil Permanent International pour l'Exploration de la Mer*, 35, 1974, pp. 363-364.

Upwelling Studied with Satellites, *Journal du Conseil Permanent International pour l'Exploration de la Mer*, 34, 1972, pp. 379-388.

Seasonal Sea Surface Temperature Variations in the Persian Gulf as Recorded by Nimbus 2 HRIR, with V.V. Salomonson and L.J. Allison, co-authors, *Limnology and Oceanography*, 17, 2, 1972, pp. 307-309.

Publications in scientific journals/ proceedings/reports:

Hyperspectral Imager for the Coastal Ocean (HICO): Long Island Sound. Karl Szekiela, Michale Corson, Jeffrey Bowles and Ellen Bennert, *Long Island Sound Research Conference Proceedings, 2010*, Stamford CT, October 29-30, 2010.

Brown Tide Final Report, Principal Investigator for CUNY Research Foundation Project No. 70694 with Suffolk County Department of Health, 2009.

Bloom observations with satellites in the Peconic Bay. *Long Island Sound Foundation, Research Conference Proceedings 2008*, University of Connecticut, New London, CT, 2008, 35-36.

Investigations of Marine Resources in the Octava Region of Chile, *D + C*, Berlin, 2, 1979, pp. 27-28.

El Estudio del Ambiente Costero Mediante Sensores Remotos (trans. from English), University of Concepcion publication, 1979, pp. 412-440.

Interpretation of Satellite Data for the Near Coastal Region, *Kest Berichte*, 30, 1978, pp. 50-70.

Remote Sensing of Marine Renewable Resources. In: *Aerial/Spatial Remote Sensing and Marine Resources*, Brest, 1977, pp. 237-251.

Monitoring African Dust Events: Comparison of Satellite Imagery, Field Data and Laboratory Analysis, C. Brine, co-author, *Trans., Am. Geophys. Union*, 56, 1975, p. 6.

The Release of Manganese in Sea Water by Eolian Dust from Africa, C. Brine, co-author, *Deutsche Hydrographische Zeitschrift*, 28, 1975, pp. 120-123.

Fernerkundung von Fischfanggrunden, *Umschau*, 74, 1974, p. 586.

The Hot Spot in the Ross Sea: Upwelling During Wintertime, *Tethys*, 6, 1974, pp. 105-110.

Observation of Suspended Material from Spacecraft Altitudes, *Deutsche Hydrographische Zeitschrift*, 27, 1974, pp. 159-170.

Chemical Aspects in Delaware Bay, *Delaware Bay Report Series*, 4, 145, 1973, p. 170.

Nimbus Observations of Oceanic Upwelling. In: *Significant Accomplishments in Sciences*, NASA Goddard Space Flight Center, Greenbelt, Maryland, 1972, pp. 14-17.

Chlorophyll Structure in the Ocean, R.J. Curran, co-author. In: *Earth Resources Technology Satellite-1*, NASA Goddard Space Flight Center, Greenbelt, Maryland, 1972, pp. 139-141.

Ozeanische Strukturen in Satellitenbildern, *Umschau*, 72, 1972, pp. 95-97.