

Karl H. SZEKIELDA

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Degree

Docteur de l'Université
1967, University of Aix-Marseille, France

Professional Employment

Title: Adjunct Professor/ Research Associate

1982- to present Department of Geography
Hunter College, City University of New York

1999- to present Member Doctoral Faculty
Ph.D. Program in Earth and Environmental Sciences
City University of New York
The Graduate School and University Center

Columbia University Research Associate:
http://www.seas.columbia.edu/earth/research_associates/szekiolda.pdf

Summer

2008, 2009, 2010 Senior Faculty Fellow
2006 and 2007 ASEE Summer Faculty Research Program
Naval Research Laboratory
Washington, D.C.

2002-2003 NOAA Research Professor
Cooperative Remote Sensing Science
and Technology Center, CUNY

2000-2003 Adjunct Professor
Department of Electrical Engineering
City College, City University of New York

2001 Adjunct Professor
Natural Science Division, Marine Science
Long Island University
Southampton College

1999-2001 Adjunct Professor
School of Continuing and Professional Studies
New York University

1997-1998 Research Associate
Earth Engineering Center
Columbia University

1998 Adjunct Professor
Department of Physics
Long Island University, Brooklyn Campus

1988	Visiting Professor Academia Sinica, Beijing, China
1976-1978	Visiting Full Professor University of Hamburg and Visiting Scientist Foundation in Maritime Transportation and Shipbuilding (GKSS) Geesthacht, Germany
1971-1975	Assistant Professor College of Marine Studies University of Delaware
1969-1971	National Academy of Sciences Associate NASA Goddard Space Flight Center Greenbelt, Maryland
1966-1969	Researcher, Centre National de la Recherche Scientifique (CNRS) Station Marine d'Endoume et Centre d'Océanographie Marseille, France
1974-76, 1978-1996	United Nations <i>United Nations, Bangkok</i> Chief, Environment and Natural Resources Management Division Economic and Social Commission for Asia and the Pacific <i>United Nations, New York</i> Chief of Section, Department of Development Support and Management Services 1992-1996 Chief, Cartography Unit 1989-1992 Chief, Remote Sensing Unit 1978-1989 Ocean Economics and Technology Office 1974-1976
Awards	2004 <i>Anastasia Van Burkalow</i> Distinguished Service Award 1976 Océ-van der Grinten Prize for <i>Monitoring marine pollution from space</i>

Most recent publications:

High spatial resolution spectrometry of rafting macroalgae (*Sargassum*). Karl H. Szekiolda, George O. Marmorino, Jeffrey H. Bowles and David Gillis. *Journal of Applied Remote Sensing*, 2010, vol. 4, 043529 [doi: 10.1117/1.3431044].

Patch recognition of algal blooms and macroalgae. K.H. Szekiolda, J.H. Bowles, D.B. Gillis, W. Snyder, W.D. Miller. In: *Ocean Sensing and Monitoring II, Proc. of SPIE*, edited by Wellin (Will) Hou and Robert A. Arnone, 2010, vol. 7678 76780A-1 [doi: 10.1117/12.854772].

Final report Research Foundation/Suffolk County Dept. of Health 2009:
<http://www.peconicestuary.org/BrownTideA.pdf>

NRL Sensors publication 2009:
<http://www.mdpi.com/1424-8220/9/4/2907/pdf>

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

Interpretation of Absorption Bands in Airborne Hyperspectral Radiance Data. Karl H. Szekiolda, Jeffrey Bowles, David B. Gillis and W. David Miller. *Sensors*, 9, ISSN 1424-8220, 22 April 2009, 2907-2925.

Airborne hyperspectral imaging of cyanobacteria accumulations in the Potomac River. Karl H. Szekiolda, G. Marmorino, Shelia J. Maness, Timothy Donato, Jeffrey H. Bowles, W. David Miller, W. Joseph Rhea. *Journal of Applied Remote Sensing*, 2007, vol. 1, 13544-13554.

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, 387-395.

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

Spectral Reflectance measurements of estuarine waters K. H. Szekiolda, C. Gobler, F. Moshary, B. Gross and S. Ahmed). *Ocean Dynamics*, 53, 2003, 98-102.

Spectral recognition of marine bio-geochemical provinces with MODIS, First Workshop on Remote Sensing of the Coastal Zones, 5-7 June 2003, Ghent, Belgium, EARSel, 3 (2), 261-275, reviewed publication.

Presentations:

Patch recognition of algal blooms
Karl H. Szekiolda, Jeffrey H. Bowles, David Gillis, W. Snyder, D. Miller.
(Presented by D. Gillis)
SPIE Defense, Security and Sensing
Orlando World Center Marriott Resort & Convention Center
Orlando Florida, 5-9 April, 2010

Spatial and temporal scales of bloom observations with satellites in the Peconic Bay.
Karl H. Szekiolda, Theresa Goergen and Hyojin Ahn
Long Island Sound Foundation, Research Conference, University of Connecticut
New London, CT, October 30, 2008.

Remote sensing spectrometry of algal blooms
Earth and Environmental Engineering, Columbia University,
New York., NY, September 19, 2008.

Detection of harmful algae blooms with remote sensing techniques
10th Annual Wetlands and Watersheds Workshop,
Ocean City, MD, October 22-24, 2007.

Hyperspectral imaging spectroscopy for eutrophication monitoring: spatial and temporal events, with S.J. Maness, J.H. Bowles, G.O. Marmorino, D.B. Gillis, D.R. Korwan, G. Lamela, M.J. Montes, W.J. Rhea and W.A. Snyder
Seventh Annual Marine and Estuarine Shallow Water Science and Management Conference, Atlantic City, NJ, September 25-27, 2006.

Eutrophication in New York shallow waters, co-authored with J. Schellner, S. Chang, G. Schembri (presenter), *Seventh Annual Marine and Estuarine Shallow Water Science and Management Conference*, Atlantic City, NJ, September 25-27, 2006.

Use of the first and second chlorophyll absorption bands for marine biogeochemical patch recognition, *MTS/IEEE Oceans Conference 2005*, Washington, D. C., September 21, 2005.

Eutrophication of coastal marshlands and estuaries of New York, *Watershed and Wetlands Workshop 2004*, Atlantic City, NJ..

October 25-28, 2004.

Recognition of ditches in coastal wetlands with aerial photography, co-authored with Hyo Jin Ahn (presenter), *Watershed and Wetlands Workshop 2004*, Atlantic City, NJ October 25-28, 2004.

Columbia University DEEE Colloquium: Presentation on Spectral characterization of the coastal zone: comparison between the water-leaving radiance and the photosynthetic carotenoids, New York, NY, 31 January 2003.

Reflectance Changes in Near-Coastal Waters with C. Gobler, B Gross, F. Moshary, S. Ahmed, coauthors, *Seventh International Conference on Remote Sensing for Marine and Coastal Environments 2002*, Miami, May 20-22, 2002.

Spectral Response of Hydrophytic Vegetation, *Hydrophytic Vegetation Workshop*, Atlantic City, March 20-22, 2002.

Laser spectroscopy on microbial mats in a Marsh Environment, *Hydrophytic Vegetation Workshop*, Atlantic City, March 20-22, 2002.

Settlement of Suspended Particles in Relation to their Optical Signatures, *Fifth Biennial Long Island Sound Research Conference Proceedings 2000*, Stamford, Connecticut, November 17-18, 2000.

New York University International Programs, SCPS: Critical environmental issues, New York City July 27, 2000.

Fordham University, Institute for International Humanitarian Affairs: Global and Environmental Issues, New York, NY, June 20, 2000.

Spectral Properties of Suspended and Dissolved Material in Long Island Sound. *Fifth Marine and Estuarine Shallow Water Science and Management Conference*, Atlantic City, March 12-16, 2000.

Book

Satellite Monitoring of the Earth, John Wiley and Sons, Inc. New York, 1988, 326 pp.

Contributions to books

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.

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.

Spacecraft Oceanography. In: *Oceanography and Marine Biology: an Annual Review*, ed. by M. Barnes, Aberdeen, Aberdeen University Press, 14, 1976, pp. 99-166.

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.

Journals

Investigations with satellites on eutrophication of coastal regions, Part VI: Characterization of water masses in the Huanghai Sea. In: *Transport of Carbon and Minerals in Major World Rivers, Part VI*, ed. by E.T. Degens et al., *SCOPE/UNEP Special Issue*, 64, 1987, 93-112, University of Hamburg, 512 pp.

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.

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

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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.

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.

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.

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.

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

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Heterogeneities in Salinity in a River Plume, with S. Kupferman, co-author, *Estuarine and Coastal Marine Science*, 1, 1973, pp. 419-424.

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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.

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

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Satellite Ocean Temperature Analysis of the Indian Ocean, with W. Shenk, *Jour. Marine Biol. Ass.*, India, 14, 1972, pp. 102-108.

Oceanographic Applications of Color-Enhanced Satellite Imageries, with W.F. Mitchell, co-author, *Remote Sensing Environment*, 2, 1972, pp. 71-76.

Conditions Ecologiques dues à l'Evaporation dans les Etangs de Camargue, avec P. Kerambrun, *Hydrobiologie*, 37, 1971, pp. 273-283.

Remote Sensing of Ocean Currents and Sea Surface Temperature Changes Derived from the Nimbus 2 Satellite, with G. Warnecke, L.J. Allison and L.M. McMillin, co-authors, *Journal of Physical Oceanography*, 1, 1971, pp. 45-60.

Anticyclonic and Cyclonic Eddies Near the Somali Coast, *Deutsche Hydrographische Zeitschrift*, 24, 1971, pp. 26-29.

Monsoonal Response in the Western Indian Ocean, with W. Duing, co-author, *Journal of Geophysical Research*, 76, 1971, pp. 4181-4187.

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Le Dosage du Carbone Particulaire et son Application dans le Golfe du Lion, *Journal du Conseil Permanent International pour l'Exploration de la Mer*, 32, 1969, pp. 318-343.

The Application of a Chemical Model to Calculate the "Theoretical" Organic Carbon in Sea Water. *Journal du Conseil Permanent International pour l'Exploration de la Mer*, 33, 1969, pp. 14-19.

La Composition Élémentaire (C,H,N) dans *Sphaeroma serratum* et *S. hookeri* (Crustacea: Isopoda), *Marine Biology*, 1969, pp. 352-356.

Influence des Modifications Hydrologiques sur le Peuplement de *Sphaeroma* dans l'Etang de Berre, avec P. Kerambrun, *Cahiers de Biologie Marine*, 1969, pp. 301-308.

Vergleichende Untersuchungen über den Gehalt an organischem Kohlenstoff im Meerwasser und dem Kalimpermanganatverbrauch, *Journal du Conseil Permanent International pour l'Exploration de la Mer*, 32, 1968, pp. 17-24.

The Transport of Organic Matter in the Bottom Water of the Ocean, *Sarsia*, 34, 1968, pp. 243-252.

Le Carbone Particulaire dans les Masses de l'Eau Profondes, *Marine Biology*, 2, 1968, pp. 71-72.

Situation Hydrologique et Distribution du Zooplankton dans le Nordouest de la Mer d'Arabie,, avec M. Leveau, *Sarsia*, 34, 1968, pp. 285-298.

Proceedings and Technical reports

Remote sensing of suspended matter in Long Island Sound. In: *Long Island Sound Research Conference Proceedings*, 2004, pp. 55-59.

Satellite Monitoring of Particulate Matter in Long Island Sound, *Fourth Proceedings of the Long Island Research Conference 1998*, November 13-14, 1998, State University of New York, Purchase, New York, pp. 95-105.

Marine and Coastal Resources Monitoring with Satellites. In: *Remote Sensing and Its Impact on Developing Countries*, ed. by C. Chagas and V. Canuto, Pontifical Academy, Vatican City, 1987, pp. 291-339.

Satellite Remote Sensing for Developing Countries. In: *Remote Sensing and Its Impact on Developing Countries*, ed. by C. Chagas and V. Canuto, Pontifical Academy Vatican City, 1987, pp. 553-561.

Space Observations Over Fishing Grounds. In: *COSPAR: The Contribution of Space Observations to Global Food Information Systems*, Pergamon Press, 1978, pp. 173-179.

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Temperature and Chlorophyll Patches in the Upwelling Along the Northwest Coast of Africa, *Proceedings, American Society of Photogrammetry Fall Convention*, Lake Buena Vista, Florida, 1973, pp. 664-714.

Upwelling Studies with Satellites. In: *Proceedings of the Symposium on Remote Sensing in Marine Biology and Fishery Resources*, Texas A & M University, 1971, pp. 271-293.

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Le Dosage Simultané du Carbone de l'Hydrogène de l'Azote dans le Matériel en Suspension dans l'Eau de Mer, Note Technique, 1968.

Courses taught

City University of New York, Hunter College

Oceanography (Spring 2010, Spring/Fall 2009, Spring/Fall 2008, Fall 2004, Spring 2003, Spring 2002, Fall 1999)

International Pollution Issues (Fall 2009, Spring 2008, 2007, 2006, 2005, 2004, 2003)

Sustainable Development and Environment through International Cooperation (Fall 2007, 2003, 2002)

Remote Sensing (Spring 2010, Spring 2006, Spring/Fall 2002)

Coastal Zone Management (Fall 2006, Fall 2005)
Development and International Cooperation (Fall 2004)
Oceans and Earth Environment (Fall 2003, Spring 1999, Spring 1998)
Coastal Geomorphology (Fall 2001, 1999, 1998)
Satellite Monitoring of Earth (Spring 2001, Fall 1998)
Urban and Metropolitan Coasts (Spring 1998)

City University of New York, City College

Remote Sensing and Satellite Imaging (Spring 2003, Fall 2002, Spring 2002, Fall 2001, Spring 2001, Spring 2000)

New York University, SCPS

Environmental Studies (Spring 2000, Fall 1999)
International Organizations (Summer 2000)

Long Island University, Southampton College

Physical Oceanography (Fall 2001)

Long Island University, Brooklyn Campus

Earth Sciences (Spring 1998)