

**WAYNE STATE UNIVERSITY**  
**Professional Record**

**NAME: MARK M. BASKARAN**

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Date Prepared: 5<sup>th</sup> Dec. 2007  
Date(s) Revised: 23<sup>rd</sup> Jan. 2015  
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**DEPARTMENT/COLLEGE:** Geology/Liberal Arts and Sciences

**PRESENT RANK & DATE OF RANK:** Professor – 8/2007

**WSU APPOINTMENT HISTORY:**

Year Appointed/Rank	1999/Senior Lecturer
Year Promoted to Associate Professor	2000
Year Awarded Tenure	2004
Year Promoted to Full Professor	2007

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**PLACE OF BIRTH:** Watrap (India)

**CITIZEN OF:** United States

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**EDUCATION** (Give name of institution, place and date of degree)

**Baccalaureate:** V.H.N.S.N. College, Virudhunagar, India, Physics (Major) Chemistry and Mathematics (Minor), May 1977.

**Graduate:** M.S. Madurai-Kamaraj University, Madurai, India, Physics, May 1979.  
Ph.D. Physical Research Laboratory, Ahmedabad, India, Isotope Geochemistry, August 1985.

**Postdoctoral:** Physical Research Laboratory, Ahmedabad, India, August 1985-July 1987.  
University of Alaska, Fairbanks, AK, August 1987-September 1988.

**APPOINTMENTS AT OTHER INSTITUTIONS (Years):**

Research Scientist, Texas A&M University at Galveston (TAMU-G)  
1/1995-6/1999.

Senior Lecturer, Texas A&M University at Galveston, 9/1992-5/1999

Lecturer, Texas A&M University at Galveston, 10/1988-8/1992.

**CONSULTANCIES:**

- International Atomic Energy Agency (IAEA): Technical Working Group for *Thorium in the Environment* (5/2012 – 2013)
  - Radiation Consultant to the Citizen's Action Group, Mixed-Waste Landfill, Department of Energy, Sandia National Laboratory, Albuquerque, New Mexico, 1999-2001.
  - Radiation Consultant, Citizen's Group, Mixed-Waste Landfill in Union Town, Ohio, 2000-2007.
  - Radiation Monitoring Consultant, APIA, Anchorage, Alaska, 2006-2008.
  - Radiation Measurement Consultant, U.S. Geological Survey, 2008.
  - Radiation Expert, Talus Resources, Houston, Texas, 2008-present.
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**PROFESSIONAL SOCIETY MEMBERSHIP(S) and EDITORSHIP:**

Associate Editor – Estuarine, Coastal and Shelf Science  
Geochemical Society 2010-present

American Geophysical Union, 1988-present  
American Chemical Society, 2003-present  
Estuarine Federation Society, 1995-1996  
Sigma-Xi, 1987-1988

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**HONORS/AWARDS:**

Visiting Professor, East China Normal University (2014 - )	2014
Board of Governors Faculty Recognition Award, Wayne State University	2013
Board of Governors Distinguished Faculty Fellow, Wayne State University	2010-2012
Elected as <i>Visiting Research Fellow</i> , St. Anne's College, Oxford University	2009
Valedictorian awarded Gold Medal, M.S.	1977-1979
Valedictorian awarded Gold Medal, B.S.	1974-1977

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**BIOGRAPHICAL CITATIONS** (National/Regional or Professional Directories):

Listing: WHO'S WHO in South and Southwest 1996/1997 onwards;  
WHO'S WHO in Science and Engineering 1996/1997 onwards;  
WHO'S WHO in America 1996/1997 onwards;  
WHO'S WHO in the World 1997 onwards

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**I. TEACHING**

- A. Since Fall 1999
- B. Years at Other Colleges/University (Please list): 11 years at Texas A&M University
- C. Courses Taught at Wayne State in Last Five Years
- Undergraduate
    - GEL-1000 - Geology and the Environment
    - GEL 1010 - Geology: The Science of the Earth
    - GEL-1050 – Oceanography (Online Course)
    - GEL-1370 - Meteorology: The Study of Weather (Online Course)
    - GEL 4850 - Research in Geology
    - GEL-5993 - Writing Intensive
  - Graduate
    - GEL-5080 - Environmental Isotope Geochemistry.
    - GEL-5120 - Environmental Geochemistry
    - GEL-5510 - Fate and Transport of Pollutants in the Environment
    - GEL-6400 – Geochronology/Nuclear Geology
    - GEL-7970 - Research in Geology
    - GEL-7990 - How to Build a Habitable Planet – Directed Study
  - Graduate Professional School: None
- D. Essays/Theses/Dissertations Directed
- Students by Name, Level, Title of Project, Year
- Wayne State:**

Daphne McNeary, M. S. thesis (Dept. of Geology - Chair), 4/5/2002, entitled: "The Depositional Characteristics of <sup>7</sup>Be, <sup>210</sup>Pb, and <sup>210</sup>Po in Southeastern Michigan."

Sarah Trimble, M. S. thesis (Dept. of Geology - Chair), 5/13/2003, entitled: "The Distribution of uranium and thorium series radionuclides in the Canada Basin, Arctic Ocean."

Elizabeth Garver, M. S. thesis (Dept. of Geology - Chair), 7/29/2003, entitled: "Mechanisms of release of uranium and thorium-series radionuclides from a suite of natural minerals."

Jason Jweda, M.S. thesis (Department of Geology – Chair), entitled: "Short-lived radionuclides as tracers of particle dynamics in a river system in Southeast Michigan." August 2007.

Anton Puvirajah, Ph.D. dissertation (College of Education – Member), 8/2007, entitled: "The nature of scientific enquiry and argumentation in advanced placement environmental science students – a TITiC Project."

David Brackney, D.Ed. (College of Education, Cognate Committee Member).

Allison Muhamed, Ph.D. dissertation (Department of Anthropology – Member), 4/2010, entitled: "Bioarchaeology of a Prehistoric Michigan Population: Frazer-Tyra Site 20SA9."

Rajalakshmi Mudbidre, Ph.D. dissertation entitled "Distribution of PCBs in the Clinton River watershed and implications to its fate using <sup>210</sup>Po and <sup>210</sup>Pb as tracers" (Oakland University, Co-Chair), 2009.

Marty Eakin, M.S. (Dept. of Geology, June 2014; co-chair)

Ayowale Emmanuel Ayodele, M.S. (Dept of Geology, June 2014; Chair)

Thomas Novell (Incomplete thesis work; M.S.)

Lynn Katrib, Ph.D. (Co-Chair, discontinued from her Ph.D. program in Civil and Environmental Engineering)

John Niedermiller, M.S. (Dept of Geology, currently enrolled; Chair)

Jenna Hage-Hassan, M.S. (Dept of Geology, currently enrolled; Chair)

Katie Krupp, M.S. (Dept of Geology, currently enrolled; Chair)

Served as a committee member in a number of master thesis committees that include: Curt Lichy, Andy Frahm, Shannon Molaroni, Lauren Bugdalski (currently serving in Brenden OLeary, Mary Carnegie)

**External Examiner for Ph.D. Thesis outside United States:**

Selvaraj, M., Ph.D. Madras University, India	1998
Jonathan, M.P., Ph.D. Madras University, India	1999
Kannan, V., Ph.D. Anna University, India	2002
Ramachandran, S., Ph.D. Anna University, India	2005
Kumar, A. Ph.D., Anna University, India	2007

**E. Course or Curriculum Development**

GEL 5080 - 3 Credit Course - Environmental Isotope Geochemistry

GEL-6400 - 4 Credit Course – Geochronology

GEL-5510 - 4 Credit Course – Fate and Transport of Contaminants

GEL-1370 - Online Meteorology Course (jointly with American Meteorological Society)

GEL-1050 – Online Oceanography Course (jointly with American Meteorological Society)

**F. Course Materials Unpublished - None**

**II. RESEARCH**

**A. Research in Progress, Not Funded**

**B. Funded Research in Last Ten Years:**

**Wayne State:**

- PI: “Acquisition of a low-level beta counter”, \$ **39,180**, 1 January , 2015 – 31 December, 2015, Research Equipment Program, Office of the Vice-President for Research, Wayne State University.
- Co-PI: “Sediment Yield and Dam Capacity in the Great Lakes Watershed”, \$ **487,180** (Geology portion: \$ **274,051**), PI: Carol Miller, USACE, September 2014 – September 2015.
- PI: “GEOTRACES Arctic section: Application of  $^{210}\text{Po}$  and  $^{210}\text{Pb}$  distribution at contrasting interface regimes of Western Arctic”, \$ **265,798**, October 15, 2014 – September 30, 2017, National Science Foundation.
- PI: “Assessment of Changes in the Environmental Lead levels from Demolition of Houses from a Systematic Sampling of Air and Soil at Demolition Sites”, \$ **90,254**, September 12, 2013 – 30 June 30, 2014, NextEnergy Center.
- PI: “Workshop to Assess the Recent Changes in the Biogeochemistry of the Great Lakes System (BOGLS)”, \$ **25,000**, February 1, 2013 – January 31, 2014, National Science Foundation.
- PI: “Dating of Sediments from Lake Huron and Saginaw Bay” \$ **30,000**, March – December 2013, CILER (NOAA via University of Michigan).
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- PI: ‘Collaborative Research: GEOTRACES –  $^{210}\text{Po}$  and  $^{210}\text{Pb}$  distribution at Eastern Pacific Interface Regimes”, \$ **189,844**, August 1, 2012 – July 31, 2015 – National Science Foundation.
- PI: “Geophysical Parameters Optimization in Oil-Well Industry”, \$ **19,000**, Co-PI: Nagesh Kulkarni, June 29, 2012 – December 31, 2012, QARC.
- Co-PI: “Sediment Yield and Dam Capacity in the Great Lakes Watershed: Reconnaissance and Laboratory Analysis”, \$ **428,147** (Geology portion: \$ **157,291**), PI: Carol Miller, USACE, September 2010 – August 2012.
- PI: “Acquisition of Additional Counting Instruments for Radiochemical Research at Wayne State University”, \$ **30,700**, August 31, 2010 – August 31, 2011 – National Science Foundation.
- PI: “Collaborative Research: GEOTRACES-Application of  $^{210}\text{Pb}$  and  $^{210}\text{Po}$  distribution at North Atlantic Interface regimes”, \$ **101,182**, April 1, 2010 – March 31, 2014 - National Science Foundation.
- PI: “Collaborative Research: GEOTRACES-Methods development and Intercalibration for the  $^{210}\text{Pb}$  and  $^{210}\text{Po}$  radionuclide pair”, \$ **85,000**, July 15, 2009 – July 31, 2012 - National Science Foundation.
- PI: “Source Identification of Lead Using its Isotopic Ratios: Implications to the Children’s Health Issue in an Urban Laboratory”, \$ **20,979**, June 15, 2009 – November 15, 2010, President’s Research Enhancement Program – Urban Research, Wayne State University.
- PI: “Assessment and Compilation of Data for the Digital Library for Urban Environmental Data and Watershed Management”, \$ **9,950**, November 11, 2008 – November 10, 2009, Office of Vice-President for Research, Wayne State University.
- PI: Observatory of Submerged Sinkhole Ecosystems in Thunder Bay National Marine Sanctuary, Lake Huron: Habitat Exploration, Life Inventory, and Hydrologic Monitoring, National Oceanic

Atmospheric Administration, \$ **32,256** (Total funding: \$ 285,551; jointly with NOAA-GLERL, Grand Valley State University, University of Wisconsin, University of Michigan), 5/2008-4/2010.

- PI: Developing a New Online Course: Introduction to Oceanography”, \$ **5,000**, April 24, 2008 – April 23, 2009, Educational Development Grant, Wayne State University.
- PI: United States Geological Survey, ‘Analytical Services: Radiochemical Analysis of sediment and water samples’, \$ **9,860**, 9/2007 - 7/2008.
- PI: PSI Consulting (Funding from the Department of Environment, State of Florida), ‘Tracer Investigations to Identify the Source(s) of Contaminants at the Sub-Surface Contaminated Site at Fuller Heights, Mulberry, Florida’, \$ **63,204**, 11/2006 - 10/2007.
- PI: Aleutian/Pribilof Islands Association Inc., Anchorage, Alaska, ‘Radiochemical investigations on subsistent food chain in the Arctic and sub-arctic regions’, \$ **12,000**, 06/2006 - 5/2007.
- PI: U.S. Civilian Research and Development Foundation, ‘Estimation of Submarine Groundwater Discharge of Groundwater and Nutrients in the Coastal Waters off the Caspian Sea, Adjoining Azerbaijan, Using Ra and Rn isotopes’, \$ **9,100** (Total amount \$45,500, jointly with Geology Institute of Azerbaijan), 10/2005 - 9/2007.
- PI: United States Geological Survey (Co-operative Agreement), ‘Characterization of Submarine Groundwater Discharge in Tampa Bay, Florida, Using a set of Radiochemical Tracers’, \$ **90,500**, 5/2003 - 9/2007.
- P.I: United States Geological Survey, ‘Analytical Services: Radiochemical Analysis of sediment and water samples’, \$ **15,000**, 9/2004 - 10/2005.
- P.I: United States Geological Survey, ‘Radiochemical Analysis of sediment samples’, \$ **10,000**, 9/2003 - 9/2004.
- PI: Oakland University (US EPA-Funded), ‘Clinton River AOC Preparation for sediment remediation-chemical and radiochemical analysis,’ \$ **24,500**, 3/2004 - 9/2005.
- P.I: Michigan Department of Environmental Quality (through Wayne County Department of Environment), ‘Quantification of the Reduction in Nutrient Loading and Development of New Diagnostic Tracers in the Elimination of Illicit Connections in the Ecorse Creek Watershed’, \$ **108,787**, 9/2002 - 12/2004.
- PI: Open University, U.K., ‘Analysis of Radium and radon Isotopes in groundwater samples from a sandy aquifer in Australia’, \$ **4,025**, 04/2004 - 08/2004.
- P.I: United States Geological Survey, ‘Analytical Services: Radiochemical Analysis of sediment and water samples,’ \$ **12,000**, 9/2003 - 9/2005.
- PI: CALTECH, ‘Analysis of radium in groundwater samples’, \$ **3,000**, 06/2003 - 12/2003.
- P.I: AMEC Earth and Environmental Inc. (supported by Electric Power Research Institute), ‘Geochronological and sedimentological investigations on Lake sediments from Georgia, USA’, \$ **48,196**, 12/2001 - 12/2003.
- P.I: City of St. Clair (Macomb County), ‘Dating Sediment cores from Lake St. Clair, Michigan’, \$ **5,000**, 11/2002 - 6/2003.
- P.I: CALTECH, ‘Measurements of radium and radon in groundwater samples from South Dakota’, \$ **3,000**, 8/2002 – 7/2003.
- P.I: National Science Foundation, ‘The behavior and distribution of particle-reactive radionuclide tracers in particulates, colloids and solution in the Canada Basin of the Arctic Ocean’, \$ **120,163**, 07/99 - 04/2002.

- P.I: University of Alaska, Fairbanks, ‘Dating of sediment core from Elson Lagoon in the Northern Alaska’, \$ **2,000**, 12/2001 - 02/2002.
- P.I: CALTECH, ‘Measurements of radium and radon in groundwater samples from New Mexico’, \$ **6,000**, 03/2001 - 11/2001.
- P.I: Alaska Department of Fish and Game, ‘Radiochemical Investigations on Caribou and Muskox tissues from Alaska’, \$ **8,000**, 05/2001 - 11/2001.
- P.I.: Aleutian/Pribilof Islands Association, Inc., Anchorage, Alaska, ‘Radionuclide Analyses of Sea Otter skull tissue – A pilot Study to investigate the sources of radionuclides to areas adjoining Amchitka Island’, \$ **12,240**, 07/1999 - 04/2000.
- P.I.: University of Alaska, Fairbanks, AK, ‘Dating of Alaskan Lake sediments using <sup>210</sup>Pb and <sup>137</sup>Cs. University of Alaska’, \$ **6,000**, 7/00 - 6/2001.
- Various Sources: Radiochemical Analytical Work \$ **8,000** (\$2,000 from University of Alaska (02/2002); \$1,000 from Stockholm University (12/2001); \$5,000 from U.S. Geological Survey (at various times from 1/2000 - 8/2002).

**At Texas A&M University at Galveston:**

- PI: National Science Foundation, ‘The behavior and distribution of particle-reactive radionuclide tracers in particulates, colloids and solution in the Canada Basin of the Arctic Ocean’, 11/97 to 06/99, \$186,004.
- P.I.: Aleutian/Pribilof Islands Association, Inc., Anchorage, Alaska, ‘Radionuclide Analyses of Sea Otter skull tissue – A pilot Study to investigate the sources of radionuclides to areas adjoining Amchitka Island’, 12/98-06/99, \$ 9,792.
- P.I.: University of Alaska, Fairbanks, ‘Dating of Alaskan Lake sediments using <sup>210</sup>Pb and <sup>137</sup>Cs’, 8/97–6/00, \$ 26,000.
- P.I: National Science Foundation, ‘Acquisition of State-of-the-Art High-Efficiency, High Resolution, Gamma Ray Detector’, 2/98-1/99, \$ 30,000.
- P.I.: California Institute of Technology, ‘Aquifer transport of Th, U, Ra and Rn in solution and on colloids, Subcontract from California Institute of Technology (DOE Grant)’ - 11/96-10/99, \$ 25,000.
- P.I: Office of Naval Research, ‘Fate and mobility of naturally occurring and anthropogenic radionuclides in the Barents and Kara Seas’, 6/93-11/96, \$ 330,000.
- P.I.: “A molecular and carbon isotopic carbon isotopic record of ecosystem response to changes in water availability and CO<sub>2</sub> levels, 7/95-6/96, \$ (subcontract amount: \$15,000), total grant: \$ 128,000.
- Co-P.I: Department of Energy, ‘The production of colloids in the benthic boundary layer and particle-particle interactions, 6/92-5/97, \$ 1,368,260.
- Co-P.I.: ‘Historical contamination of Mississippi River delta and Galveston Bay sediments’ 9/93-12/94, \$ 55,000, National Oceanic Atmospheric Administration.
- PI: Reconstruction of historical contamination in San Francisco Bay, 7/93-6/94, U.S. Geological Survey, \$10,725.

- P.I.: Plant pigments and radionuclides as tracers of organic carbon flux in the Sabine-Neches estuary. 1/92 – 8/94, \$98,000 (jointly with Tom Bianchi), Advanced Research Grant, State of Texas.
- Co-P.I.: Processes which control the cycling of the toxicant lead in Galveston Bay, Texas Sea-Grant, 9/91 – 8/93, \$ 105,147.
- Co-P.I.: ‘The production of colloids in the benthic boundary layer and particle-particle interactions’, 07/91-06/94, \$ 527,654, National Science Foundation.

**C. Fellowships/Grants/Special Awards:**

1. Graduate Research Assistantship for Daphne McNeary (1999-2001)
2. Excellence in Research - \$10,000 award from the office of the Vice-President for Research for the purchase of Gamma Ray Detector, \$5,000 from the Dean of the College of Science (2000).
3. Board of Governors Distinguished Faculty Fellowship Award \$ 6500/year for two years.
4. Graduate Research Assistantship for Lynn Katrib (2013-2014)

**D. Pending Grant Proposals: None**

**E. VISITING SCIENTISTS HOSTED:**

- Mr. B. Ramalingeswara Rao, National Institute of Oceanography, Goa (6 November – 6 December, 2013)
- Prof. Jinzhou Du, East China Normal University, China (1-5 December 2013)
- Prof. Luis Barbero, University of Cadiz, Spain (1 March – 30 April, 2012)
- Gi-Hoon Hong, Professor, Korea Ocean Research and Development, Ansan, S. Korea (August 2008 – July 2009)
- Ma Qiang, Visiting Scholar, Xiamen University, China (October 2008- October 2009)
- Profs. Chingiz Aliyev and Akper Fazeyullah, Geological Institute, National Academy of Azerbaijan
- Ms. Huseynova Sevinj Tariverdi, Geological Institute, National Academy of Azerbaijan
- Dr. D. V. Borole, National Institute of Oceanography, Goa, India
- Sandra Domatto from IPEN-Sao Paulo, 6-months visit on an IAEA Fellowship

**F. Ocean Expeditions**

- Participant, BERINGIA-2005 in Ice-Breaker ODEN,-Leg-II, Arctic Ocean, July 20-August 18, 2005
- Chief Scientist, USCGC POLAR STAR, AWS-2000, 2 weeks in the Western Arctic Ocean, 2000.
- Participant, USCGC POLAR STAR, 4 weeks in the Western Arctic Ocean, 1998.
- Chief Scientist, R/V GYRE 93G12 in the Gulf of Mexico, 1993.
- Chief Scientist, R/V GYRE 92G7 in the Gulf of Mexico, 1992.
- Chief Scientist, R/V GYRE 91G4 in the Gulf of Mexico, 1991.
- Participant, R/V GYRE 90G7 in the Gulf of Mexico, November 1990.
- Participant, R/V GYRE 89G15 in the Gulf of Mexico, November 1989.
- Participant, R/V Sagar Kanya in the Arabian Sea, May 1986.
- Participant, R/V SURVEYOR, Chuckchi Sea, Bering Sea, August-September 1987.
- Participant, R/V METEOR, North Sea, 6 weeks (Analysis of Cs and Am onboard), 1982.
- Participant, Geophysical Cruise in the Baltic Sea (from Kiel), one week, 1982.
- Participant, R/V Gaveshani, Training Cruise for students, Bay of Bengal, 1981.

**III. PUBLICATIONS**

**A. Scholarly Books Published**

1. Authored: None

2. Co-Authored: None

**B. Chapters Published**

1. Authored

**Baskaran, M.** (1999). Particle-reactive radionuclides as tracers of biogeochemical processes in estuarine and coastal waters of the Gulf of Mexico. In: *Biogeochemistry of Gulf of Mexico Estuaries*, T. S. Bianchi, J. R. Pennock and R. Twilley (eds), Wiley, 381-404.

2. Co-Authored

McKee, B. A. and **M. Baskaran** (1999) Sedimentary Processes. In: *Biogeochemistry of Gulf of Mexico Estuaries*, T. S. Bianchi, J. R. Pennock and R. Twilley (eds), Wiley, 63-85.

**C. Editorships of Books/Proceedings:** Handbook of *Environmental Isotope Geochemistry*, Springer-Verlag, 2-set Volume, with a total of 40 articles, published in September 2011 (Editor, Mark Baskaran)

**D. Journal Articles Published:**

**1. Refereed Journals:**

**In Review (\*: Papers with graduate students):**

**Baskaran, M.,** J. Jweda, J.L. Newton, C. Stringer, and P.W. Swarzenski (2015). Investigations on the Adsorption-Desorption Rate Constants and Retardation Factors Derived from  $^{223,224,226,228}\text{Ra}$  and  $^{222}\text{Rn}$  Isotopes in a Floridan Aquifer: Implications to the Mobility of Redox-Sensitive Species. *Chemical Geology* (in review).

**Published Papers (Total Cumulative Science Citation Index: 3,131 (on 23 Jan. 2015); h-index: 34; Google Scholar: Cumulative Citations: 4,588; h-index: 40):**

- 1) **Baskaran, M.,** M. M. Sarin, and B. L. K. Somayajulu (1984). Composition and mineral fractions of the Narbada and Tapi estuarine particles and the adjacent Arabian Sea sediments off Western India. *Chem. Geol.* 45: 33-51.
- 2) Krishnaswami, S., **M. Baskaran,** S. W. Fowler and M. Heyraud (1985). Comparative role of Salps and other zooplankton in the cycling and transport of selected elements and natural radionuclides in Mediterranean Waters. *Biogeochemistry* 1: 353-360.
- 3) **Baskaran, M.** and B. L. K. Somayajulu (1986). Mineralogy of Saurashtra Miliolites. *J. Geol. Soc.* 27(1): 63-89.
- 4) **Baskaran, M.,** S. Krishnaswami and N. Bhandari (1986). The Geochemical significance of uranium and thorium in the salt lakes and adjacent groundwaters of Rajasthan. *J. Geol. Soc.* 27: 90-101.
- 5) **Baskaran, M.,** A. R. Marathe, S. N. Rajaguru and B. L. K. Somayajulu (1986). Geochronology of Paleolithic cultures in the Hiran Valley, Saurashtra, India. *J. Arch. Sci.* 13: 505-514.
- 6) **Baskaran, M.,** B. Sahai, R. K. Sood and B. L. K. Somayajulu (1987). Geochronological studies of strandline miliolites of Saurashtra, India, detected by remote sensing techniques. *Int. J. Remote Sensing* 8(2): 169-176.
- 7) Fisher, N. S., J. L. Teyssie, S. Krishnaswami and **M. Baskaran** (1987). Accumulation of Th, Pb, U and Ra in marine phytoplankton and its geochemical significance. *Limnol. Oceanogr.* 32(1): 131-142.



- 8) **Baskaran, M.**, S. V. Deshpande, S. N. Rajaguru and B. L. K. Somayajulu (1989). Geochronology of Miliolite Rocks of Kutch, Western India. *Jour. Geol. Soc.* 33: 588-593.
- 9) Chakrabarti, A. and **M. Baskaran** (1989). Biogenic Fecal Pellet Mounds in Quaternary Miliolites of Saurashtra, India. *Paleogeogr., Paleoclimatol., Paleoecol.* 73: 311-315.
- 10) **Baskaran, M.**, G. Rajagopalan and B. L. K. Somayajulu (1989).  $^{230}\text{Th}/^{234}\text{U}$  and  $^{14}\text{C}$  Dating of the Quaternary Carbonate Deposits of Saurashtra, India. *Chem. Geol.* 10(1): 65-82.
- 11) Gosink, T. A., **M. Baskaran** and D. F. Holleman (1990). Radon in the Body from Drinking Water. *Health Physics* 59(6): 919-924.
- 12) **Baskaran, M.** and B. L. K. Somayajulu (1990). Clay Mineral Distributions in Dated Miliolites of the Late Quaternary from Saurashtra and Kutch, Gujarat. *Jour. Geol. Soc.* 35: 471-479.
- 13) Chakrabarti, A., **M. Baskaran** and B. Kumar (1991). Do surface textures of quartz grains always indicate the final depositional environments?: A case study from the miliolitic rocks of Saurashtra, Gujarat, India. *Geol. Soc. Special Publication No. 16*: 77-83.
- 14) **Baskaran, M.**, J. J. Kelley, A. S. Naidu and D. F. Holleman (1991). Environmental Radiocesium in Subarctic and Arctic Alaska following Chernobyl. *Arctic* 44(4): 346-350.
- 15) Krishnaswami, S., Ravi Bhushan and **M. Baskaran** (1991). Radium Isotopes and  $^{222}\text{Rn}$  in Shallow Brines, Kharagoda (India). *Chem. Geol. (Isotope Geoscience Section)* 87: 125-136.
- 16) **Baskaran, M.**, G. Rajagopalan, and B.L.K. Somayajulu (1991).  $^{230}\text{Th}/^{234}\text{U}$  and  $^{14}\text{C}$  dating of Quaternary carbonate deposits of Saurashtra, India – Reply. *Chem. Geol.* 86: 179-186.
- 17) **Baskaran, M.**, P. H. Santschi, G. Benoit and B. D. Honeyman (1992). Scavenging of thorium isotopes by colloids in seawater of the Gulf of Mexico. *Geochim. Cosmochim. Acta* 56: 3375-3388.
- 18) **Baskaran, M.**, C. H. Coleman and P. H. Santschi (1993). Atmospheric depositional fluxes of  $^7\text{Be}$  and  $^{210}\text{Pb}$  at Galveston and College Station, Texas. *J. Geophys. Res.* 98: 20,555-20,571.
- 19) Chakrabarti, A., B. L. K. Somayajulu, **M. Baskaran** and B. Kumar (1993). Quaternary Miliolites of Kutch and Saurashtra, Western India: Depositional environments in the light of physical sedimentary structures, biogenic structures and geochronological setting of the rocks. *Senckenbergiana Maritima* 23: 7-28.
- 20) **Baskaran, M.**, D. J. Murphy, P. H. Santschi, J. C. Orr and D. R. Schink (1993). A method for rapid in-situ extraction and laboratory determination of Th, Pb and Ra isotopes from large volumes of seawater. *Deep-Sea Res.* 40(4): 849-865.
- 21) **Baskaran, M.** and T. M. Illiffe (1993). Age determination of recent cave deposits using excess  $^{210}\text{Pb}$ - A new technique. *Geophys. Res. Lett.* 20(7): 603-606.
- 22) **Baskaran, M.** and R. V. Krishnamurthy (1993). The  $\delta^{13}\text{C}$  of cave deposits: A potential indicator of the  $\delta^{13}\text{C}$  of atmospheric  $\text{CO}_2$ . *Geophys. Res. Lett.* 20: 2905-2908.
- 23) **Baskaran, M.** and P. H. Santschi (1993). The role of particles and colloids in the transport of radionuclides in coastal environments of Texas. *Mar. Chem.* 43: 95-114.

- 24) Santschi, P. H., L. Guo, **M. Baskaran**, S. Trumbore, J. Southon, T. S. Bianchi, B. D. Honeyman, and L. Cifuentes (1995). Isotopic and biochemical evidence for the recent origin of colloidal organic matter in the ocean. *Geochim. Cosmochim. Acta* 59: 625-631.
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- 124) **Baskaran, M.**, J. Nix, C. Kuyper and N. Karunakara (2014). Problems with the dating of sediment core using excess  $^{210}\text{Pb}_{\text{xs}}$  in a freshwater system impacted by large scale watershed changes. *J. Environ. Radioact.* 138, 355-363.
- 125) Rigaud, S., G. Stewart, **M. Baskaran**, D. Marsan, and T.M. Church (2014).  $^{210}\text{Po}$  and  $^{210}\text{Pb}$  distribution, dissolved-particulate exchange rates, and particulate export along the North Atlantic US GEOTRACES GA03 section. *Deep-Sea Res. II* (in press).

## 2. Non Refereed Journals: None

### E. Papers Published in Conference Proceedings and Submitted Reports:



- 1) **Baskaran, M.** and J. Bratton and Steering Committee Members (2014). A Report of the Workshop entitled “Recent Biogeochemical Changes in the Biogeochemistry of the Great Lakes System (BOGLS)”, pp. 42. Available at: <http://bogls.science.wayne.edu/>
- 2) **Baskaran, M.** and J. Bratton (2013). Investigating human-induced changes of elemental cycles in the Great Lakes. EOS 94(28), 9 July 2013.
- 3) Schweitzer, L., **M. Baskaran**, E. van Hees and ECT (2006) Clinton River AOC Preparation for Sediment Remediation. Report submitted to USEPA CLNPO, p. 105.
- 4) Hong, G.-H., **M. Baskaran**, and P. Povinec (2004). Artificial radionuclides in the western North Pacific: Current understanding and a proposal for the future research. Article presented at the International Workshop on Terrestrial and Ocean Environment – Present and Future – 19-21 January 2004.
- 5) Swarzenski, P.W. and **M. Baskaran** (2004). Is the extraction of thorium onto MnO<sub>2</sub>-coated filter cartridges uniform. USGS Open File Report 2004-1421.
- 6) **Baskaran, M.**, G. H. Hong, S. Dayton, J. Bodkin, and J. J. Kelley (2000). Radionuclide analyses of sea otter skull tissue – a pilot study to investigate the sources of radionuclides to areas adjoining Amchitka Island. Final Report submitted to the Aleutian Pribilof Islands Associations, Inc. p. 14.
- 7) **Baskaran, M.** (2000). Mixed Waste Landfill Review. Report submitted to the Citizens’ Advisory Group for the Sandia National Laboratory Mixed Waste Landfill, Albuquerque, New Mexico, p. 28.
- 8) Bianchi, T. S., K. H. Freeman, P. G. Hatcher and **M. Baskaran** (1996). Paleoclimatic and paleoecologic change: a molecular and carbon isotopic record of ecosystem response to change in water availability and CO<sub>2</sub>-levels (Mud Lake, FL). Report submitted to the Southcentral Regional Center National Institute for Global Environmental Change, Department of Energy, p. 1- 26.
- 9) Presley, B. J., T. L. Wade, P. H. Santschi and **M. Baskaran** (1996). Historical contamination of Mississippi River delta, Tampa Bay and Galveston Bay sediments. Report submitted to the NOAA, Silver-Spring, MD, p. 1-65.
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- 11) **Baskaran, M.**, S. Asbill, P. H. Santschi, T. Davis, J. M. Brooks, M. A. Champ, V. Makeyev and V. Khlebovich (1995). Concentrations and inventories of <sup>137</sup>Cs and <sup>239,240</sup>Pu in sediment and biological samples from Ob, Yenisey Rivers and Kara Sea. In: Proc. of the Workshop on Monitoring of Nuclear Contamination in Arctic Seas, by ed. Steven E. King, May 1995, p. (IV) 2-15.
- 12) Brooks, J. M., M. A. Champ, **M. Baskaran**, W. Bryant, N. Slowey, P. H. Santschi, M. C. Kennicutt, T. L. Wade, N. L. Guinasso and V. Makeyev (1995). Radionuclide contaminants released to the Russian Arctic from land-based and subsea sources. In: J. Morgan and L. Codispoti, Eds., Department of Defense Arctic Nuclear Waste Assessment Program, FY’s 1993-1994. Office of Naval Research Report ONR 322-95-5, Arlington, Virginia.
- 13) Santschi, P. H., **M. Baskaran**, B. D. Honeyman and T. S. Bianchi (1994). The production of colloids in the benthic boundary and particle-particle interactions. Report submitted to the Ocean Margins Program, Department of Energy, DE-FG-05-92ERG1421.

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**F. Translation of Other Authors Published: None**

1. Books: None
2. Articles or Creative Works: None

**G. Abstracts Published in Academic Journals**

**Abstracts/Papers Presented in National and International Meetings:**

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- McNeary, D. and **M. Baskaran** (2000). The depositional fluxes of  $^{210}\text{Pb}$ ,  $^7\text{Be}$  and  $^{210}\text{Po}$  in Detroit, Michigan. Paper presented at the International Heavy Metals in the Environment Conference, August 7<sup>th</sup> and 8<sup>th</sup>, 2000, Ann Arbor, MI, Contribution # 1271.
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- Syrup, K. A., R. V. Krishnamurthy, **M. Baskaran** and A. Long (1994). Implications of a high resolution  $\delta^{13}\text{C}_{\text{Org}}$ , C/N record from lake core sediments. Paper presented at the American Geophysical Union Meeting at Baltimore. EOS 75(16) H11A-6, p.143.
- Baskaran, M.** and P. H. Santschi (1994). The distribution of  $^{228}\text{Ra}/^{226}\text{Ra}$  Activity Ratio in the Gulf of Mexico waters. Paper presented at the Ocean Sciences Meeting at San Diego, California. EOS 75(3) O21A-15, p. 65.
- Santschi, P. H., L. Guo, **M. Baskaran**, and B. D. Honeyman (1994). Isotopic and biochemical evidence for the recent origin of colloidal organic matter in the ocean. Paper presented at the American Chemical Society Meeting, San Diego, California, March 1994.
- Ravichandran, M., **M. Baskaran**, P. H. Santschi, T. Bianchi (1994). Accumulation rate of sediments and trace metals in Sabine-Neches estuary, Beaumont, Texas. 1994. Paper presented at the Ocean Sciences Meeting at San Diego, California. EOS 75(3) O32M-10, p. 144.
- Naidu, A. S. and **M. Baskaran** (1994).  $^{210}\text{Pb}$ - and  $^{137}\text{Cs}$ -Derived chronology and the fluxes of two isotopes in the continental shelf regions of the eastern Chukchi sea, Alaskan Arctic. Paper presented at the Ocean Sciences Meeting at San Diego, California. EOS 75(3) O42E-4, p. 176.
- Fuller, C. C., A. Van Geen, and **M. Baskaran** (1994). Records of contaminant input to San Francisco Bay: 3. Sediment chronology from  $^{210}\text{Pb}$ ,  $^{137}\text{Cs}$ ,  $^{239,240}\text{Pu}$ ,  $^{234}\text{Th}$  activity profiles. Paper presented at the Ocean Sciences Meeting at San Diego, California. EOS 75(3) O52M-4, p. 233.
- Santschi, P. H., L. Guo and **M. Baskaran** (1994). Association of  $^{234}\text{Th}$  with suspended particles and colloids in the Gulf of Mexico and the Atlantic Ocean. Paper presented at the Ocean Sciences Meeting at San Diego, California. EOS 75(3) O52N-6, p. 235.

- Baskaran, M.** and R. V. Krishnamurthy (1993). Speleothems at Proxy for  $\delta^{13}\text{C}$  composition in the atmospheric  $\text{CO}_2$ . Paper presented at the American Geophysical Union Meeting at San Francisco. EOS 74(43) H31A-17, p.267.
- Santschi, P. H., **M. Baskaran**, L. Guo, T. Bianchi, and C. Lambert (1993).  $^{234}\text{Th}$ : $^{238}\text{U}$  disequilibria in the Gulf of Mexico: the importance of Organic Matter. Paper presented at the American Geophysical Union Meeting at San Francisco. EOS 74(43) O12D-1, p.327.
- Baskaran, M.** and A. S. Naidu (1993). Sediment inventory of  $^{137}\text{Cs}$  in the Chukchi Sea and Kotzebue Sound of the continental shelf regions of the Alaskan Arctic. Paper presented at the Conference on "Radioactivity and Environmental Security in the Oceans: New Research and Policy Priorities in the Arctic and North Atlantic" held at the Woods Hole Oceanographic Institution, Woods Hole, June 14-17, 1993.
- Bianchi, T. S., **M. Baskaran**, and J. DeLord (1993). Carbon cycling in a shallow turbid estuary of southeast Texas. Abstract presented at the National Estuarine Conference.
- Lawrence, J. R., **M. Baskaran**, P. H. Santschi, and S. D. Gedzelman (1993).  $\delta^{18}\text{O}$  -  $^7\text{Be}$ -  $^{210}\text{Pb}$  Relationships in Southeast Texas Precipitation. Paper presented at the American Geophysical Union at Baltimore, EOS, 74, A22A-6.
- Baskaran, M.**, C. H. Coleman and P. H. Santschi (1992). Atmospheric depositional fluxes of  $^7\text{Be}$  and  $^{210}\text{Pb}$  at Galveston and College Station, Texas. Paper presented at the American Geophysical Union at San Francisco, O21E-12.
- Naidu, A. S. and **M. Baskaran** (1992).  $^{210}\text{Pb}$  based sediment accumulation rates in continental shelves and selected coastal regions of Alaska. Abstract presented at 25th SIL International Congress, Barcelona, Spain.
- Baskaran, M.** and P. H. Santschi (1992). Residence times of colloidal material in the surface ocean waters. American Geophysical Union, Abstract Presented at the Ocean Sciences Meeting, New Orleans, O32F-2.
- Santschi, P. H., **M. Baskaran** and C. H. Coleman (1992). Interfacial processes in estuarine and coastal marine environments. American Geophysical Union, Abstract Presented at the Ocean Sciences Meeting, New Orleans, O12D-4.
- Baskaran, M.** (1991).  $^{228}\text{Ra}/^{226}\text{Ra}$  Activity ratio as a tracer of sediment dynamics in Baffin Bay Sediments. Paper presented at the Southern Regional Geochemists Meeting, Port Aransas, Texas, September 27-28, 1991
- Santschi, P. H. and **M. Baskaran** (1991). The role of particles and colloids in the transport of radionuclides and trace metals in estuarine and coastal environments. Paper presented at Second Int. Sympo. on the Biogeochemistry of Model estuaries: Estuarine Processes and Global change, Jekyll Island, Georgia, USA, April 14-20, 1991.
- Santschi, P. H., **M. Baskaran**, G. Benoit, C. H. Coleman, S. Asbill, A. Cantu, M. Hood, S. Oktay and P. Shannon (1991). The role of colloids in removing trace metals from estuarine waters. Presented at the Texas Academy of Science, 94th Annual Meeting, S. F. Austin State University, Nacogdoches, TX, March 1-2, 1991.
- Shannon, P., **M. Baskaran** and P. H. Santschi (1991). Radioactive isotopes as tracers of sediment erosion. Paper presented at the Texas Academy of Science, 94th Annual Meeting, S. F. Austin State University, Nacogdoches, TX, March 1-2, 1991.
- Baskaran, M.**, C. H. Coleman and P. H. Santschi (1991). Natural radionuclides as tracers of the self-cleaning capacity of Galveston Bay. Presented at the Galveston Bay Characterization Workshop, Houston, Feb. 21-23, 1991
- Baskaran, M.**, P. H. Santschi and G. Benoit (1990). Th isotope measurements on colloids in surface water. American Geophysical Union, Abstract Presented at the Ocean Sciences Meeting, San Francisco, OC51C-10.
- Baskaran, M.** (1991). Deposition of Pb and Be isotopes in Galveston, Texas as tracers of atmospheric processes. Paper presented at the Southern Regional Geochemists Meeting, College Station, Texas, May 4, 1990.
- Baskaran, M.**, C. Coleman, G. Benoit and P. H. Santschi (1990). Natural radionuclides in Texas Estuaries. American Geophysical Union, Abstract Presented at the Ocean Sciences Meeting, New Orleans, OS11E-5.
- Santschi, P. H., **M. Baskaran** and G. Benoit (1990). Coagulation control of radionuclide and trace metal removal from coastal waters. American Geophysical Union, Abstract Presented at the Ocean Sciences Meeting, New Orleans, OS11E-1.

- Griffin, L. L., **M. Baskaran**, A. Cantu and P. H. Santschi (1989). Determination of Uranium in natural waters by ICP-MS. Abstract presented at the 45th Southwest Regional Meeting of the American Chemical Society, Dec. 1989.
- Naidu, A. S., H. M. Feder, M. J. Hameedi and **M. Baskaran** (1988). Aquatic biogeochemistry/Ecology of Marine Macrophytes. American Geophysical Union, Abstract Presented at the San Francisco Meeting, AS22H-123.
- Baskaran, M.**, B. Sahai, R. K. Sood and B. L. K. Somayajulu (1986). Age and origin of Saurashtra miliolites from strandlines detected by remote sensing techniques. Natl. Seminar on the Applications of Remote Sensing to Geology, Space Applications Center, Ahmedabad, India.
- Baskaran, M.**, G. Rajagopalan and B. L. K. Somayajulu (1986).  $^{230}\text{Th}/^{234}\text{U}$  and  $^{14}\text{C}$  ages of Saurashtra (India) miliolites. ICOG VI, Cambridge, UK.
- Baskaran, M.** (1986).  $^{230}\text{Th}/^{234}\text{U}$  ages of Kutch miliolites. Natl. Workshop on Quaternary Carbonate and Miliolite Problems of Gujarat.
- Baskaran, M.** (1986). Mineralogical and Chemical studies of Saurashtra Miliolites. Natl. Workshop on Quaternary Carbonate and Miliolite Problems of Gujarat.
- Baskaran, M.**, G. Rajagopalan and B. L. K. Somayajulu (1986). Age determination of Saurashtra miliolites by  $^{230}\text{Th}/^{234}\text{U}$  and  $^{14}\text{C}$  methods. Natl. Workshop on Quaternary Carbonates and miliolites problems of Gujarat.
- Baskaran, M.** and B. L. K. Somayajulu (1986). A Generalized Model for the Origin and Occurrence of Saurashtra Miliolites. National Workshop on Quaternary Carbonates and Miliolite Problems of Gujarat.
- Baskaran, M.**, S. K. Bhattacharya, M. V. S. Guptha G. Rajagopalan and B. L. K. Somayajulu (1985). Radio and stable isotope systematics in marine carbonate deposits of Saurashtra, India. Int. Conf. on Isotopes in Sedimentary cycle, Obernai, France.
- Baskaran, M.**, A. R. Marathe, S. N. Rajaguru and B. L. K. Somayajulu (1983). Dating of Hiran Valley miliolites by uranium series methods: implications to geoarchaeology. ISPQS Symposium, Pune, India.
- Sood, R. K., B. Sahai, **M. Baskaran** and B. L. K. Somayajulu (1983). Pleistocene sea level changes based on Landsat imagery studies of coastal deposits. Natl. Seminar, NMRS, Hyderabad, India.
- Baskaran, M.**, M. V. S. Guptha, and B. L. K. Somayajulu (1982). Multidisciplinary studies on Saurashtra miliolites: mineralogy and paleontology. Micropalaeo and Stratigraphy Symposium, Pune, India.
- Baskaran, M.**, M. M. Sarin, and B. L. K. Somayajulu (1981). Narbada and Tapti estuarine suspended matter and sediments: major and trace metal composition of different fractions. Estuaries Symposium, Goa, India.

#### H. Book Reviews Published

1. Academic Journals: None
2. In Magazines/Newspapers: None

#### I. Creative Shows/Exhibits None

#### J. Creative Performances: None

#### K. Instructional Materials Formally Published: None

1. Textbooks
2. Study Guides/Laboratory Workbooks
3. Other Published Materials: Revision of Instructor's Manual and Test Bank Questions for Physical Geology Text Book (Chernicoff and Whitney, 4<sup>th</sup> Ed.).

#### L. Papers Presented

##### 1. Invited and/or Refereed Internationally or Nationally

All the relevant information is given in Papers presented section. Some of the papers listed above are refereed and most of them are presented in National/International meetings.



2. Invited and/or Refereed Locally/Regionally.  
(Information given above)

**M. Invited Seminars/ Lectures Presented and Workshops Attended:**

- **Invited Talk:** State Key Laboratory for Estuarine and Coastal Research Institute, East China Normal University, Shanghai, China, August 4, 2014.
- **Invited Talk:** Goldschmidt2014, Sacramento, CA, 8-13 June, 2014.
- **Invited Seminars:** Delivered 3 seminars at Ege University, Izmir, Turkey (one each at Nuclear Science Institute; Center for Environmental Studies; and Science and Technology Research Center)
- **Plenary Session Speaker** at the Second International Conference on Po and Radioactive Pb isotopes, 11-13 February 2013, Mangalore, India.
- **Invited Talk:** Two seminars at the Department of Geology, Anna University, Chennai, India on 8<sup>th</sup> Feb. 2013.
- **Invited Talk:** Case Western Reserve University – Earth and Environmental Science Department, October 5, 2012.
- **Invited Workshop:** “GEOTRACES: Arctic Implementation Plan Workshop, Arlington, VA, June 13-15, 2012.
- **Invited Workshop:** “GEOTRACES: Arctic Implementation Workshop,” Arlington, VA, June 12-10, 2010.
- **Invited Seminar:** Universidad de Huelva, Spain on July 27, 2010 (*Nuclear Clocks: Major Advances in Earth Sciences*).
- **Invited Seminar:** Universidad de Cadiz, Spain on July 21, 2010 (*Applications of U-Th-Isotopes as Tracers and Chronometers in Marine System*).
- **Invited Workshop:** “GEOTRACES: Intercalibration Workshop,” Norfolk, VA, March 8-10, 2010.
- **Plenary Session Speaker** at the International Topical Conference on Po and Radioactive Pb isotopes, 26-28 October 2009, Seville, Spain.
- **Invited International Workshop:** “GEOTRACES: Arctic Ocean Planning Workshop,” Dormenhorst, Germany, June, 2009 and served as a Rapporteur for one of the three working groups.
- **Invited Seminar:** Oxford University (Department of Earth Sciences) on March 11, 2009
- **Invited Seminar:** Swedish Museum of Natural History (University of Stockholm) on March 8, 2009
- **Invited Seminar:** Anna University, Chennai, India (Department of Earth and Environmental Science) on August 25, 2008.
- **Invited Seminar:** Indian Institute of Science, Bangalore, India (Center for Earth Sciences and Center for Ocean and Atmospheric Sciences), Two seminars on August 21, 2008.
- **Invited Seminar:** Physical Research Laboratory, Ahmedabad, India on August 19, 2008.
- **Invited Workshop:** “GEOTRACES: Intercalibration Workshop,” San Francisco, CA, December 8-9, 2007.
- **Invited International Workshop:** “GEOTRACES: Indian Ocean Planning Workshop,” Goa, India, October 24-26, 2007 and served as a Rapporteur for one of the three working groups.
- **Invited National Workshop:** “AMS/NOAA/NSF Online Weather Studies MSI Faculty Workshop,” Kansas City, MO, May 21-25, 2007.
- **Invited National Workshop:** “Arctic System Synthesis Workshop: New Perspectives through Data Discovery and Modeling” (workshop sponsored by the National Science Foundation through ARC SS Science Management Office), 2-4 April, 2007 at the Bell Harbor Conference Center, Seattle.
- **Invited Seminar:** Department of Geology, University of Toronto, Canada, on October 5, 2006.
- **Invited National Workshop:** “Ocean Carbon Biogeochemistry” 10-13 July 2006, Woods Hole Oceanographic Institution, Woods Hole, MA and presented a Poster.
- **Invited Talk at the public forum at Uniontown, Ohio:** “Evidence for Anthropogenic Activity at the Industrial Landfill, Uniontown, Ohio” 23<sup>rd</sup> May, 2006.
- **Invited National Workshop:** Bering Sea Drilling Workshop, June 20-22, 2005, Fairbanks, Alaska; presented a paper (workshop sponsored by Joint Oceanographic Institution Inc.).
- **Invited National Workshop:** “Paleoenvironmental reconstruction using Clam Shells” 7<sup>th</sup> July 2005 at St. Petersburg, Florida (sponsored by U.S. Geological Survey).
- **Invited Seminar:** College of Marine Studies, University of Delaware (Newark) on May 6<sup>th</sup>, 2005 (Title: Role of Colloids in the Removal of Particle-Reactive Radionuclides in the Arctic Ocean).
- **Invited Seminar:** Annis Water Resources Institute, Grand Valley State University, Muskegon, MI, on March 17<sup>th</sup>, 2005 (Title: Applications of short-lived radionuclides as tracers and chronometers in a freshwater system).

- **Invited National Workshop:** “Sea Ice Mass Balance in the Arctic Ocean (SIMBA)” – NSF-Sponsored Meeting, Applied Physics Laboratory, University of Washington, Seattle, 28 Feb.-2 March, 2004.
- **Invited Seminar:** Western Michigan University on 15<sup>th</sup> November 2004 (Title: Role of colloidal and particulate matter in thorium scavenging in the Canada Basin of the Arctic Ocean). **Invited Seminar:** Chemistry Department in Oakland University on 27<sup>th</sup> October 2004 (Title: Short-lived Radionuclides as Tracers of Atmospheric Processes).
- **Invited International Workshop:** “Future Applications of <sup>234</sup>Th in Aquatic Ecosystems Workshop” – NSF Sponsored Workshop at Woods Hole Oceanographic Institution, Woods Hole, MA, August 16-19, 2004.
- **Invited Seminar:** Indian Institute of Technology (Madras) on 5<sup>th</sup> August 2004, entitled “Radionuclides as Tracers and Chronometers in Environmental Problems.”
- **Invited Seminar:** National Institute of Oceanography, Goa (India) on 29 July 2004, entitled “Scavenging of Particle Reactive Radionuclides in the Arctic Ocean”.
- **Invited National Workshop:** “The Amerasian Basin and its Margins” – NSF-Sponsored Meeting, Washington D.C., at the Joint Oceanographic Institutions, 8-9 June, 2004.
- **Invited Seminar:** Korea Oceanographic and Developmental Research Institute (KORDI) on March 6, 2003.
- **Invited Presentation:** The American Chemical Society, Analytical Chemistry Division, Detroit, Michigan, Two presentations on 21 November 2002.
- **Invited Workshop:** University of Alaska, Fairbanks, AK – Amchitka Island Long-term Stewardship Workshop, Fairbanks, AK, presented three talks, February 12-14, 2002. Served as a Reporter for one of the three Technical Working Groups (Marine Science and Radioecology).
- **Invited National Workshop:** Arctic Research Workshop – NOAA - Presented a paper entitled “Reconstruction of historical contaminants and particle flux in the Arctic Ocean” in the Arctic Research Workshop held at the NOAA Headquarters in Washington D.C. on July 25-26, 2001.
- **Invited Talk:** Oakland University, Rochester, Michigan, November 13, 2001.
- **Invited presentations:** American Chemical Society, Analytical Chemistry Division, Detroit, Michigan, Two presentations on 16 November 2000.
- **Invited Talk:** Barrow Arctic Science Consortium, Barrow, Alaska – Invited to present a paper at the National Press Conference for Women, sponsored by the National Science Foundation, August 2000.
- **Invited talks** – Two talks at the Korea Oceanographic and Developmental Research Institute (KORDI) on March 14 & 15, 2000.
- **Invited Seminar:** Institute of Marine Science, University of Delaware, April 1999.
- **Invited Seminar:** Department of Geology, University of Nevada, January 1999.
- **Invited Seminar:** Pacific Northwest National Laboratory, March 1999.
- **Invited Seminar:** Savannah River Ecological Laboratory March 1999.
- **Invited Seminar:** Idaho Engineering National Laboratory, February 1999.
- **Invited Seminar:** Western Michigan University, March 1999.
- **Invited Seminar:** Center for Environmental Research and Monitoring, State University of New Mexico March 1999.
- **Invited Seminar:** Universidade Estadual Paulista, Rio Claro, Brazil, October 1997.
- **Invited Conference:** 5th International Congress of the Brazilian Geophysical Society, Sao Paulo, Brazil October 1997.
- **Invited Seminar:** Kalpakkam Atomic Research Center July 1996.
- **Invited Seminar:** Madras University, July 1996.
- **Invited Seminar:** Anna University, July 1996.
- **Invited Seminar:** Madurai University, July 1996.
- **Invited Seminar:** A series of Invited Talks at the Korea Oceanographic and Developmental Research Institute, Seoul, Korea, (June 3-14, 1996).
- **Invited Seminar:** California Institute of Technology, December 1994.
- **Invited Speaker:** International Symposium Conference on Plutonium at Ottawa, Canada, as a speaker and International Expert, (1994).
- **Invited Seminar:** Center for Nuclear Waste Regulatory Analyses, Southwest Research Institute, San Antonio, Texas (1994).

#### N. Other Scholarly Work

**Science Citation Index for the past 3 years:**

Total cumulative citation index (on all my publications): 2933 as of June 15, 2014; h-index: 33; Google Scholar: Cumulative Citations: 4,303; h-index: 40)

Year-2013 262

Year-2012 191

Year-2011 311

**Talks given at Wayne State University (outside the Department only):**

- 1) Seminar entitled “Tracking the Sources, Pathways, and Transport of Lead in the Environment Using Lead Isotopes: A Case Study from Detroit, Michigan” Wayne State University, 6<sup>th</sup> March, 2013.
- 2) Seminar entitled “Connecting Worlds: Untrodden Paths of Geology Through Physics” delivered at the 6<sup>th</sup> Undergraduate Physics Research Conference at Wayne State University, 16 Nov., 2012.
- 3) Seminar entitled “Anatomy of Fukushima Nuclear Accident: Source Tracking and Atmospheric Transport of Radionuclides” Wayne State University, 11 January, 2012.
- 4) Delivered a talk entitled “Lead Isotopes and Source Determination” at the Institute of Environmental Health Science Research on 07 January 2010.
- 5) Delivered a Colloquium entitled “Nuclear Clocks: Major Advances in Earth Sciences” at the Physics Department, Wayne State University, January 15, 2009.
- 6) Delivered a Seminar entitled “How Old the Humans and Earth Are? – A Divisive Line Among the Christians” at the Religion-Science Conference, Wayne State University, April 21, 2006.
- 7) Applications of U-Th series radionuclides as Geochronometers: An Overview. Colloquium given on November 21, 2002 at the Physics Department, Wayne State University.
- 8) Applications of short-lived radionuclides in Earth Sciences – A Review. Seminar delivered on 24 September at the Chemistry Department, Wayne State University.

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**III. SERVICE**

**A. Administrative Appointments at Wayne State in Last Five Years: N/A**

**B. Administrative Appointments at Other College/University in Last Five Years: N/A**

**C. Committee Assignments in Last Five Years**

1. University Committees Chaired: None
2. University Committee Membership:  
Academic Senate (2004-2007); FSST-Senate sub-committee (2004-2007).  
Faculty Council (2008-2011) – College of Liberal Arts and Sciences  
Promotion and Tenure (2012-2015) - College of Liberal Arts & Sciences Committee  
Selection committee for the *Board of Governors Distinguished Faculty Fellow* award (2011)  
Selection committee for the *Board of Governors Faculty Recognition Award* (2014)
3. College/Department Committees Chaired: Chaired two search committees in 2001 and 2002.
  - 1) Have been serving as the contact-person for the Department since July 1, 2001; responsibilities include scheduling off-campus (2001- present), and on-campus courses (2001 – present), assigning part-time instructors for teaching the courses (2001 – present), assignments for Geology-1010 lab instructors (with Dave Lowrie – 2001-2008), evaluation of transfer of credit applications (2001 – Sept. 2013).
  - 2) Coordination with Geology faculty on the outreach program, and arranging field courses for the specialized geology courses (2001 – 2008).
  - 3) Graduate Advisor in the Department (August 2001 – September 2008).
  - 4) Undergraduate Advisor in the Department (August 2001 – September 2013).
  - 5) Faculty liaison (1999-2001) for the Geology Club, run mainly by the students.
  - 6) Served as the Search Committee Chair for two faculty positions (Ed van Hees and Larry Lemke).

### **College/Department Committee Membership**

- Served as a member in the Strategic Plan Workshop (College of Science) – Facilities core group on December 16, 1999.
- Invited to participate College of Science Retreat (October 2001) and shared my vision for our department, to develop an active research-oriented, environmental science program.
- Faculty Council, College of Liberal Arts and Sciences, 2008-2011.

**D. Positions Held in Professional Associations in Last Five Years**  
**None**

**E. Memberships/Offices Held in Public or Private Agencies Related to Discipline in Last Five Years.**  
**American Geophysical Union, American Chemical Society.**

**F. Professional Consultation**

1. Selected as an Independent Consultant to assess the data on the Mixed Waste Landfill adjoining Sandia National Laboratory, New Mexico and to make recommendations for the future of the Landfill (yr-2000)
2. Served as a Radiation expert to the “*Concerned Citizens of Lake Township*” group on the Industrial Excess Landfill, Uniontown, Ohio (2005-2006)
3. Radiation Consultant, Talus Resources (2008-2010)

**3. Testimony before Public Bodies:**

Two presentations were made to the Public on the Radiation issue at the Mixed Waste Landfill site in Uniontown, Ohio; Two presentations were made at Albuquerque, New Mexico in 2000 on the radiation issue in the Mixed Waste Landfill adjoining Sandia National Laboratory, Albuquerque, New Mexico.

**3. Consulting to Public Agencies, Foundations, Professional Associations.**

- i) Volunteer Teaching 2<sup>nd</sup> Year College-level Physics to upper Middle and High School students at the Indus Center of Academic Excellence, a non-profit organization, on Saturdays, every week (2004-2013).
- ii) Served as a Board Member (2005-2009) at the Indus Center of Academic Excellence, a non-profit organization to promote excellence in Science and Math in Southeast Michigan (**website: [www.icae.org](http://www.icae.org)**)
- iii) Served as a Volunteer for the Concerned Citizens of Lake Township on the Industrial Excess Landfill, Uniontown, Ohio on the nuclear contamination in the groundwater system. My interview appeared in the NBC-Cleveland, Ohio as well in the local newspapers, and radio station from November 01- February 02.

**4. Consulting to Private Enterprises:** Quarkonics (2012-present)

**G. Journal/Editorships**

1. Editor, *Handbook of Environmental Isotope Geochemistry*, Springer-Verlag, 2-Set Volume with 40 Articles – Publication Date: September 2011.

2. Editorships: Served as a Guest Editor to *Marine Chemistry* (Special volume entitled: “*Biogeochemical Cycling in Tampa Bay, Florida*” – published in spring 2007 (jointly with Peter W. Swarzenski, U.S. Geological Survey, St. Petersburg, Florida).

3. Editorial Board Memberships: None

**H. Other Professionally Related Service:**

**Served as a Reviewer for the following Professional Journals:**

American Mineralogist

Applied Radiation and Isotopes

Aqueous Geochemistry  
Arctic  
Atmospheric Environment  
Chemical Geology  
Continental Shelf Research  
Deep-Sea Research  
Earth and Planetary Science Letters  
Earth Surface Processes and Landforms  
Environmental Science and Technology  
Environmental Monitoring and Assessment  
Estuaries  
Geochemical Journal  
Geophysical Research Letters  
Geochimica et Cosmochimica Acta  
Journal of Geophysical Research  
Marine Chemistry  
Marine Geology  
Marine Pollution Bulletin  
Progress in Oceanography  
Science of the Total Environment  
Solar and Terrestrial Physics  
Tellus  
Water Resources Research

**I typically review 12-15 papers/year to professional journals in my field.**

**Served as a Reviewer for the following Funding Agencies:**

National Science Foundation – Chemical Oceanography

National Science Foundation – Earth System Science, Atmospheric Science, Hydrology, Office of Polar Programs.

U.S. Civilian Research and Development Foundation (CRDF)

DOE and NOAA

Sea Grant (Texas Sea Grant Program)

National Research Council – UK

National Research Council, Canada.

**I typically review 2-5 proposals/year.**

**Other Professionally Related Service:**

- Convened at Townhall Meeting (BOGLS; with Val Klump and Ostrom Nathaniel) at Fall-2013 AGU in San Francisco on 12 December, 2013
- Convened a Community Forum (BOGLS; with Greg Dick) at Goldschmidt2013 (Geochemical Society Meeting) in Florence, Italy on 28<sup>th</sup> August, 2013
- Convened a Community Forum at the International Association of the Great Lakes Research (IAGLR) on 5<sup>th</sup> June, 2013 at Purdue University at West Lafayette, Indiana
- Convened a National Workshop entitled “Recent Changes in the Biogeochemistry of the Great Lakes System” where about 70 researchers from mostly Great Lakes States attended (11-13 March 2013)
- Served as an External Reviewer for the selection of candidates for the *Indian National Science Academy Fellows, August 2010*.
- Served as a Reviewer for three Physical Geology Text books: 1) Physical Geology – 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> Editions, Plummer, McGeary and Carlson, McGraw Hill Publisher; 2) Geology – 4<sup>th</sup> Edition, Chernicoff and Whitney, Pearson Education/Prentice Hall; and 3) The Essential Earth – Jordan and Grotzinger, Freeman Publisher.
- Convened a session at the first Asia Oceania Geosciences Society Meeting at Singapore entitled “Biogeochemical Cycling in Estuaries and Coastal Waters” July 5-9, 2004.
- Have served as an expert to several public organizations and citizens groups on the Environmental Radioactivity.