

# CURRICULUM VITAE

Liviu Giosan

Marine Geologist  
Associate Scientist  
Department of Geology and Geophysics  
Woods Hole Oceanographic Institution  
Woods Hole, MA 02543  
Phone: (508) 289 2257  
E-mail: [lgiosan@whoi.edu](mailto:lgiosan@whoi.edu)

## Education

1993	Dipl. (Hons) Geological Engineering	Bucharest University
1995	M.S. Marine Environmental Sciences <i>Advisor: Henry Bokuniewicz</i>	SUNY Stony Brook
2001	Ph.D. Marine and Atmospheric Sciences <i>Advisors: Roger Flood &amp; Henry Bokuniewicz</i>	SUNY Stony Brook
2001-2003	CICOR Postdoctoral Scholar <i>Sponsors: Lloyd Keigwin &amp; Bill Curry</i>	WHOI

## Professional Experience

2003	Postdoctoral Investigator	WHOI
2003-2007	Assistant Scientist	WHOI
2007-	Associate Scientist	WHOI

## Professional Societies

American Geophysical Union; Geological Society of America; European Geosciences Union

## Research Interests

Morphodynamics and Sedimentation: *Rivers, deltas and supply-dominated continental margins*

Paleoceanography/Paleoclimatology: *Sources, transport, transformations, and climatic significance of clastic sediments in marine, fluvial, and other aquatic environments*

Human-climate-landscape interactions: *Role of natural phenomena on development and collapse of civilizations based on reconstructions from marine/continental deposits*

## Honors

2006-2007	Honorary Research Fellow, University of Aberdeen
2001	CICOR Postdoctoral Scholar, WHOI
1993	NAFSA Baltic and East European Program Award

## Media

Research on Indus Civilization, Indian monsoon, and Black Sea featured in journals Science and Nature and online on Science Daily, National Geographic and Discovery sites.

## Shipboard and Field Experience

2010 - 2011	Co-lead scientist, Ebro delta
2008 - 2010	Co-lead scientist, Mackenzie delta
2007 - 2009	Co-lead scientist, Indus shelf
2007	Oil Industry Consultant, Indian Ocean
2006	Chief scientist, Black Sea infilled estuaries
2006	Sedimentologist, India Gas Hydrate Drilling Expedition
2004 - 2009	Co-chief scientist, Indus delta
2003 - 2011	Chief Scientist, Danube delta
2002	Lead investigator, New England continental slope
2002	Physical properties specialist, ODP Leg 202, SE Pacific
1998	Physical properties specialist, ODP Leg 172, N Atlantic

## Professional Activities

### Editorship and Reviews

2012	Lead editor, AGU monograph on “Climate, Landscapes and Civilizations”
2005	Lead editor, SEPM book on “River Deltas: Concepts, Models, Case Studies”
1998 -	Reviewer and panelist: National Science Foundation, NERC-UK, Israel Science Foundation, Dutch Science Foundation, NSERC-Canada, French and Romanian funding agencies
1998 -	Reviewer: Geology; Geophysical Research Letters; Journal of Geophysical Research; GSA Bulletin; Quaternary Science Reviews; Earth Planetary Science Letters; Earth Surface Processes and Landforms; Marine Geology; Geomorphology; Sedimentary Geology; Basin Research; Journal of Sedimentary Research; Deep Sea Research; Estuarine, Coastal and Shelf Science; Estuaries and Coasts; Quaternary Research; Marine Geophysical Researches; Marine Pollution Bulletin; (I)ODP publications

### Miscellanea

Mississippi Delta Science & Engineering Team member – advisory body of National Audubon Society, the Environmental Defense Fund, and the National Wildlife Federation.

Co-author of white paper on “Dynamics and Vulnerability of Deltas” (for GWSP/LOICZ)

Invited talks: Lamont-Doherty Earth Observatory, University of Chicago, University of New Mexico, Binghamton University, University of North Carolina, University of South Carolina, Rutgers University, Southampton University (UK).

Invited conference speaker: 18th International Sedimentological Congress, Mendoza, Argentina (2010); AGU Fall Meeting Session on deltas (2009); Estuarine Research Federation Annual Meeting (2009; 2008); Ocean Sciences Meeting (2008); IGCP Conference on Asian Deltas, Vietnam (2005); American Association of Petroleum Geologists Meeting, Dallas (2004);

(Co)-organizer/(Co)-convener/(Co)-chair: AGU Chapman Conference on Climates, Past Landscapes, and Civilizations, 2011; International IGCP Geoscience Program 581 “Evolution of Asian River Systems”, 2009-2013; DeltaNet Conference on the Impacts of Global Change on Deltas, Estuaries & Coastal Lagoons, Spain, 2011; EGU Annual Meeting session on Coasts, Estuaries and Deltas, 2011; AGU Fall Meeting session on Response of Sedimentary Systems to

Rapid Climate and Sea Level Changes and its Impacts on Humans, 2009; AGU Chapman Conference on Physics of Wave-Mud Interaction, 2008; Short Course on “Geology and Geomorphology of the Louisiana Coast” at Coastal Sediments ’07, ASCE, New Orleans, April 2007; Thematic Session on “Tideless Coasts: Sediment Processes and Engineering” at Coastal Sediments ’07, ASCE, New Orleans, April 2007; Co-convener, JOI workshop on Black Sea drilling (2003); Co-organizer, Session “Effects of Sediment Dynamics on Marine Paleorecords”, Fall AGU Meeting, San Francisco (2003); Topical Session “Deltas: Old and New”, GSA Annual Meeting (2002).

Invited workshops: IODP Building US Strategies, Denver, 2012; Scientific Drilling in the Indian Ocean, Goa, 2011; Deltas2010 – Wetland Foundation Conference, Washington, DC; INVEST, IODP Conference, Bremen, 2009; Conference Conference on U.S. Participation (CUSP) in IODP, Washington, D.C., 2002; RIOMAR (River-dominated Ocean Margins) workshop, New Orleans, 2001.

## Educational Activities

Undergraduate: 10 summer and guest undergraduate students since 2006.  
Doctoral Co-Advisor: Camilo Ponton, PhD, 2012  
Postdoctoral Research Co-Advisor: N. Ranashinghe, 2011-2012  
A. Ashton, 2005-2007  
Mentoring Committees: V. Galy (MC&G, WHOI)  
Outside Committees: J. Shobe, Univ. Alaska-Fairbanks, PhD committee, 2012-  
Invited talks: Lamont-Doherty Earth Observatory, Rutgers University,  
Southampton University (UK), University of Chicago,  
University of New Mexico, Binghamton University, University  
of North Carolina, University of South Carolina.

## Books

1. **Giosan, L.**, Fuller, D., Nicoll, K., Rowan, F., Clift, P., (Eds.), 2012, *Climate, landscapes and civilizations*, American Geophysical Union Monograph (in press).
2. **Giosan, L.** and Bhattacharya, J., (Eds.), 2005, *River Deltas: Concepts, Models, Case Studies*, SEPM Special Publication, 83, 520 p.

## Peer-Reviewed Publications (\*) denotes student paper; (#) postdoc paper

1. **Giosan, L.**, 1998. Long term sediment dynamics on Danube delta coast, 1998, in Dronkers, J. and M.B.A.M.Scheffers (eds.), *Physics of estuaries and coastal seas*: 365-376
2. **Giosan, L.**, Bokuniewicz, H.J., Panin, N., Postolache, I., 1999. Longshore sediment transport pattern along the Romanian Danube delta coast, *Journal of Coastal Research*, 15: (4): 859-871.
3. **Giosan, L.**, Flood, R.D, Grützner, J., Franz, S.-O., Poli, M.-S., Hagen, S., 2001. High resolution carbonate content estimated from diffuse spectral reflectance for ODP leg 172 sites, in Keigwin et al., *Proceedings of the Ocean Drilling Program, Scientific Results*, 172.

4. **Giosan, L.**, Flood, R.D., Aller, R.C., 2002a. Paleooceanographic significance of sediment color on western North Atlantic drifts: I. Origin of color, *Marine Geology*, 189, 1-2.
5. **Giosan, L.**, Flood, R.D., Grützner, J., Mudie, P., 2002b. Paleooceanographic significance of sediment color on western North Atlantic drifts: II. Plio-Pleistocene sedimentation, *Marine Geology*, 189, 1-2.
6. Flood, R.D. and **Giosan, L.**, 2002, Migration history of an abyssal mudwave on the Blake-Bahama Outer Ridge, *Marine Geology*, 192, 1-3.
7. Grützner, J., **Giosan, L.**, et al., 2002. Astronomical age models for Pleistocene drift sediments from the western North Atlantic (ODP Sites 1055 to 1063), *Marine Geology*, 189, 1-2.
8. Bhattacharya J. and **Giosan, L.**, 2003. Wave-influenced deltas: geomorphological implications for facies reconstruction, *Sedimentology*, 50, 1.
9. \*Siddall, M., Pratt, L., Helfrich, K., **Giosan, L.**, 2004, Testing the physical oceanographic implications of the suggested sudden Black Sea in-fill 8400 years ago, *Paleoceanography*, 19, 1.
10. **Giosan, L.** and Bhattacharya, J., 2005, New Directions in River Delta Studies, in Giosan and Bhattacharya (Eds.), *River Deltas: Concepts, Models, Case Studies*, SEPM Special Publication, 83, 3-12.
11. **Giosan, L.**, E. Vespremeanu, J.P. Donnelly, J. Bhattacharya, and F. Buonaiuto, 2005, River Delta Morphodynamics: Examples From the Danube Delta, in Giosan and Bhattacharya (Eds.), *River Deltas: Concepts, Models, Case Studies*, SEPM Special Publication, 83, p. 391-410.
12. **Giosan, L.**, J.P. Donnelly, E. Vespremeanu, S. Constantinescu, F. Filip, I. Ovejanu, A. Vespremeanu-Stroe, G.A.T. Duller, 2006, Young Danube Delta Documents Stable Black Sea Level Since Middle Holocene: Morphodynamic, Paleogeographic and Archaeological Implications, *Geology*, 34, 9, 757-760.
13. **Giosan, L.**, Constantinescu, S., Clift, P.D., Tabrez, A.R., Danish, M., Inam, A., 2006, Recent morphodynamics of the Indus delta shelf and coast, *Continental Shelf Research*, 26, 14.
14. Inam, A., Clift, P.D., **Giosan, L.**, 2007, The Geographic, Geological and Oceanographic Setting of the Indus River, in Gupta, A. (Ed.), *Large Rivers*, Willey Press, (in press).
15. Vespremeanu-Stroe, A., Constantinescu, Ş., Tătui, F., **Giosan, L.**, 2007. Multi-decadal evolution and North Atlantic Oscillation influences on the dynamics of the Danube delta shoreline, *Journal of Coastal Research*, Special Issue 50, 233-238.
16. Maddox, J., J.B. Anderson, K.T. Milliken, A.B. Rodriguez, T.M. Dellapenna, **L. Giosan**, 2008, The Holocene evolution of the Matagorda and Lavaca estuary complex, Texas, USA, in J.B. Anderson and A.B. Rodriguez (eds.), *GSA Special Paper 443: Response of Upper Gulf Coast Estuaries to Holocene Climate Change and Sea-Level Rise*.
17. Clift, P.D., **Giosan, L.**, Blusztajn, et al., 2008, Holocene Erosion of the Lesser Himalaya Triggered by Intensified Summer Monsoon. *Geology*, 35, 503–506.
18. \*Drenzek, N.J., K.A. Huguen, D.B. Montluçon, J.R. Southon, G.M. dos Santos, E.R. M. Druffel, **L. Giosan**, and T.I. Eglinton, 2008, A New Look at Old Carbon in Active Margin Sediments, *Geology*, 37: 239-242.

19. McHugh, M.G.C., D. Gurung, **L. Giosan**, W.B.F. Ryan, Y. Mart, U. Sancar, L. Burckle, M.N. Çagatay, 2008, The last reconnection of the Marmara Sea (Turkey) to the World Ocean: A paleoceanographic and paleoclimatic perspective, *Marine Geology*, 255.
20. **Giosan, L.**, F. Filip, S. Constantinescu, 2009, Was the Black Sea catastrophically flooded in the early Holocene? *Quaternary Science Reviews*, 28: 1-6.
21. Coolen, M. J. L., J. P. Saenz, **L. Giosan**, N. Y. Trowbridge, P. Dimitrov, D. Dimitrov, T. I. Eglinton. 2009, DNA and lipid molecular stratigraphic records of haptophyte succession in the Black Sea during the Holocene. *Earth and Planetary Science Letters*, 284, 610-621.
22. Syvitski, J.P.M., et al. (including **Giosan, L.**), 2009, Sinking deltas due to human activity, *Nature Geoscience*, 2: 681-686.
23. Clift, P.D., **Giosan, L.**, et al., 2010, Monsoon Control over Erosion Patterns in the Western Himalaya, in Clift, et al., “*Monsoon evolution and tectonic-climate linkage in Asia*”, *Geological Society of London Special Publication 342*: 185-218.
24. Constantinescu, S., **Giosan, L.**, Vespremeanu-Stroe, A., 2010, A cartographical perspective to the engineering works at the Sulina mouth, Danube Delta, *Acta Geodaetica et Geophysica Hungarica*, 45: 71-79.
25. #Ashton, A. and **Giosan, L.**, 2011, Wave-angle control of delta evolution, *Geophys. Res. Lett.*, doi:10.1029/2011GL047630.
26. Filipova-Marinova, M., **Giosan, L.**, et al., 2011, Palaeoecology of Submerged Prehistoric Settlements in Sozopol Harbour, Bulgaria, in Benjamin, J. et al. (Eds.), *Submerged Prehistory*, Oxbow Books, UK.
27. Alizai, A., Clift, P.D., **Giosan, L.**, et al., 2011, Pb Isotopic Variability in the Modern and Holocene Indus River System measured by Ion Microprobe in detrital K-feldspar grains, *Geochimica et Cosmochimica Acta*.
28. Limmer D.R., Boening P., **Giosan, L.**, et al. 2012, Geochemical record of Holocene to Recent sedimentation on the Western Indus continental shelf, Arabian Sea, *Geochemistry, Geophysics, Geosystems*, 13.
29. \*Ponton, C., **Giosan, L.**, Eglinton, T.E., et al., 2012, Aridification of India during Holocene, *Geophys. Res. Lett.*, 39: L03704.
30. Clift, P.D., Carter, A., **Giosan, L.**, et al., 2012, U-Pb zircon dating evidence for a Pleistocene Sarasvati River and capture of the Yamuna River, *Geology*, 40: 211-214.
31. McCartney-Castle, K., Voulgaris, G., Kettner, A.J., and **Giosan, L.**, 2012, Simulating fluvial fluxes in the Danube watershed: The Little Ice Age versus modern day, *Holocene*, 22: 91-105.
32. Alizai, A., Hillier, S., Clift, P.D., **Giosan, L.**, et al., 2012, Clay mineral variations in Holocene terrestrial sediments from the Indus Basin, *Quaternary Research*, 77: 368-381.
33. Filipova-Marinova, M., Pavlov, D., Coolen, M., **Giosan, L.**, 2012, First high resolution marinopalynological stratigraphy of Late Quaternary sediments from the central part of the Bulgarian Black Sea area, *Quaternary International*, in press.
34. Ashton, A., Hutton, E., Kettner, A.J., Xing, F., Kallumadikal, J., Neinhuis, J., **Giosan, L.**, 2012, Progress in Coupling Models of Coastline and Fluvial Dynamics, *Computers & Geosciences*, in press.

35. **Giosan, L.**, Clift, P.D., Macklin, M., Fuller, D., et al. 2012, Fluvial Landscapes of the Harappan Civilization, *Proceedings of the National Academy of Science*, in press.

### **Invited Papers/Reviews/Overviews**

1. **Giosan, L.** and Flood, R., 2004, Drilling the Aegean-Marmara-Black Sea Corridor to Investigate Extreme Environmental Changes, *EOS*.
2. **Giosan, L.** and Goodbred, S., 2006, Deltaic Environments, in *Encyclopedia of Quaternary Sciences*, Elsevier.
3. Donnelly, J.P. and **L. Giosan**, 2008, Tempestuous highs and lows in the Gulf of Mexico, *Geology*, 36, 751–752.
4. Day, J. and **Giosan, L.**, 2008, Survive or subside? *Nature Geoscience*, 1.
5. Clift, P.D, Flad, R., Fuller, D.Q., **Giosan, L.**, 2011, Studying the relationship between past people and their environments, *EOS*.

### **Non-Refereed Publications**

1. **Giosan, L.**, Bokuniewicz, H.J., Panin, N., Postolache, I., 1997. Sediment transport along the Danube delta coast, 1998, *Geo-Eco-Marina*, 2: 11-24
2. Keigwin et al. (including **Giosan, L.**), 1998, Initial Results of ODP Leg 172 - Blake-Bahamas Outer Ridge, Bermuda Rise, *Proc. Ocean Drilling Program, Initial Results*, 172.
3. Mix et al. (including **Giosan, L.**), 2003, Initial Results of ODP Leg 202 - Southeast Pacific Paleooceanographic Transects, *Proc. Ocean Drilling Program, Initial Results*, 202.
4. **Giosan, L.** 2007, Morphodynamic Feedbacks on Deltaic Coasts: Lessons from the Wave-Dominated Danube Delta, Coastal Sediments '07 Proceedings, ASCE.
5. #Ashton, A.D. and **Giosan, L.**, 2007. Investigating plan-view asymmetry in wave-influenced deltas. 5th IAHR Symposium on River, Coastal, and Estuarine Morphodynamics. International Association of Hydraulic Researchers, Enschede, Netherlands, p. 681-688.
6. Syvitski, J., Overeem, I. (Eds.), 2009, Dynamics and Vulnerability of Deltas, LOICZ Reports and Studies No. 35
7. Mississippi Delta Science and Engineering Special Team, 2012, Answering 10 Fundamental Questions about the Mississippi Delta, National Audubon Society, the Environmental Defense Fund, and the National Wildlife Federation.

### **Abstracts**

Author or co-author over 80 conference abstracts.