

Dr. Thorsten Dittmar, Assistant Professor

Department of Oceanography
Florida State University, Tallahassee

Personal Information

Date of birth: August 10, 1970 in Konstanz, Germany
Languages: German, English, Portuguese, and Spanish

Education

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| Apr. '96 – Aug. '99 | <p>Ph.D. (Marine Chemistry, Summa Cum Laude)
Center for Tropical Marine Ecology (University of Bremen, Germany)
in cooperation with Federal University of Pará (Belém, Brazil) and
Alfred Wegener Institute for Polar and Marine Research (Bremerhaven, Germany)</p> <p>Title of dissertation:
"Outwelling of Organic Matter and Nutrients from a Mangrove in North Brazil:
Evidence from Organic Tracers and Flux Measurements"
Advisors: Dr. Rubén J. Lara, Dr. Gerhard Kattner</p> |
| Nov. '90 – Oct. '95 | <p>M.Sc. (Geoecology, passed with distinction)
University of Bayreuth, in cooperation with University of La Serena (Chile)</p> <p>Title of thesis: "Spatial, temporal and chemical variability of heavy metals in the Elqui
river system, Chile"</p> |

Appointments

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|---------------------|---|
| Dec. '03 – present | <p>Assistant Professor
Florida State University, Department of Oceanography</p> |
| Jan. '00 – Dec. '03 | <p>Research Associate
Alfred Wegener Institute for Polar and Marine Research, working with
Dr. G. Kattner on the biogeochemistry of organic matter in the ocean</p> |
| Apr. '96 – Aug. '99 | <p>Doctoral Fellow
Center for Tropical Marine Ecology at the University of Bremen (Germany) and
Federal University of Pará (Belém, Brazil)</p> |
| Nov. '95 – Apr. '96 | <p>Research Assistant, Institute of Limnology, University of Bayreuth</p> |
| Jun. '89 – Oct. '90 | <p>Employee, Environmental Protection Office (Ravensburg, Germany)</p> |

Academic Awards and Honors

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| 2001 – 2003 | <p>Research Stipendium of the German Research Foundation (DFG) to work with
Dr. John I. Hedges at the School of Oceanography (University of Washington)</p> |
| 2001 | <p>DIALOG IV (ASLO) Meeting, Bermudas</p> |
| 2000 | <p>Wilhelmshaven Marine Science Award 2000</p> |
| 1990 – 1995 | <p>Scholarship of <i>Studienstiftung des Deutschen Volkes</i></p> |
| 1986 | <p>Federal German Award in Environmental Sciences <i>Jugend Forscht</i></p> |

Funded Research

- Principal Investigator, NOAA Climate and Global Change Program
“Does the ice-covered Southern Ocean act as a ‘dissolved organic matter pump’ to the abyssal ocean and so sequester carbon from active cycles?”, 2005-2008, **\$448,438**.
- Principal Investigator, FSU Research Foundation Equipment and Infrastructure Enhancement Grant
“Funding request for the purchase of an organic carbon / nitrogen analyzer for liquid and solid environmental samples”, 2005-2006, **\$44,178**.
- Principal Investigator, Florida Institute of Oceanography
“A multidisciplinary approach for evaluating contrasting coastal environments in the Northern Gulf of Mexico.”, 2005-2007, **\$38,500**.
- Principal Investigator, Petroleum Research Fund (American Chemical Society)
“Life in Antarctic sea ice: a significant source of persistent organic compounds to the world oceans?”, 2004-2006, **\$35,000**.
- Principal Investigator, Florida State University (First Year Asst. Prof. Grant)
“Deciphering the Molecular Rosetta Stone in Florida Salt Marshes: Do Intertidal Environments Impact Element Cycles on a Global Scale?”, 2004, **\$13,000**.
- Principal Investigator, German Research Foundation (DFG)
“Molecular transformations of terrigenous organic material in the ocean: A case study in the mangrove-ocean system”, 2001-2003, approx. **\$120,000**.
- Co-Principal Investigator, German Research Foundation (DFG)
“Refractory dissolved organic substances in the ocean: Formation processes under marine Antarctic and continentally influenced Arctic conditions”, 2001-2003, approx. **\$150,000**.
- Co-Principal Investigator, German Academic Exchange Service
“Organic Matter Preservation in the Ocean”, 2002-2003, approx. **\$35,000**.

Peer-reviewed Publications

Submitted

- 24 Kristensen E, Bouillon S, **Dittmar T** and Marchand C (submitted) Organic matter dynamics in mangrove ecosystems, with emphasis on input, dispersal, trophic transfer and biogeochemical alterations. *Aquatic Botany*.
- 23 Zemmeling HJ, Houghton L, Dacey JWH, Stefels J, Koch BP, Schröder M, Wisotzki A, Scheltz A, Thomas DN, Papadimitriou S, Kennedy H, Kuosa H and **Dittmar T** (submitted) Stratification and the distribution of phytoplankton, nutrients, inorganic carbon and sulfur in the surface waters of Weddell Sea leads. *Deep-Sea Research II*.

2007

- 22 Koch BP, **Dittmar T**, Witt M and Kattner G (2007) Fundamentals of molecular formula assignment to ultrahigh resolution mass data of natural organic matter. *Analytical Chemistry*. In press.
- 21 Tremblay LB, **Dittmar T**, Marshall AG, Cooper WJ and Cooper WT (2007) Molecular characterization of dissolved organic matter in a North Brazilian mangrove porewater and mangrove-fringed estuaries by Ultrahigh Resolution Electrospray Ionization Fourier Transform-Ion Cyclotron Resonance Mass Spectrometry and Excitation/Emission Spectroscopy. *Marine Chemistry*. In press.
- 20 **Dittmar T**, Whitehead K, Minor L and Koch BP (2007) Tracing the photodegradation of mangrove dissolved organic matter on the North Brazilian shelf. *Marine Chemistry*. In press.
- 19 Wu Y, **Dittmar T**, Ludwighowski K-U, Kattner G, Zhang J, Zhu ZY, Koch BP (2007) Tracing suspended organic nitrogen from the Yangtze catchment into the East China Sea. *Marine Chemistry*. In press.

2006

- 18 **Dittmar T** and Koch BP (2006) Thermogenic organic matter dissolved in the abyssal ocean. *Marine Chemistry* 102, 208–217.
- 17 **Dittmar T**, Hertkorn N, Kattner G and Lara RJ (2006) Mangroves, a major source of dissolved organic carbon to the oceans. *Global Biogeochemical Cycles* 20, GB1012.
- 16 Koch BP and **Dittmar T** (2006) From mass to structure: An aromaticity index for high-resolution mass data of natural organic matter. *Rapid Communications in Mass Spectrometry* 20, 926–932.

2005

- 15 Koch BP, Witt M, Engbrodt R, **Dittmar T** and Kattner G (2005) Molecular formulae of marine and terrigenous dissolved organic matter detected by Electrospray Ionisation Fourier Transform Ion Cyclotron Resonance Mass Spectrometry. *Geochimica et Cosmochimica Acta* 69, 3299–3308.

2004

- 14 **Dittmar T** (2004) Evidence for terrigenous dissolved organic nitrogen in the Arctic deep-sea. *Limnology and Oceanography* 49, 148–156.
- 13 **Dittmar T** (2004) Hydrochemical processes controlling arsenic and heavy metal contamination in the Elqui river system (Chile). *The Science of the Total Environment* 325, 193–207.
- 12 Cohen M, Lara RJ, Szlafsztein CF and **Dittmar T** (2004) Mangrove inundation and nutrient dynamics under a GIS perspective. *Wetlands Ecology and Management* 12, 81–86.

2003

- 11 **Dittmar T** and Kattner G (2003) The biogeochemistry of the river and shelf ecosystem of the Arctic Ocean: A review. *Marine Chemistry* 83, 103–120. # **1 most requested article 2003 and 2004 Marine Chemistry**.
- 10 **Dittmar T** and Kattner G (2003) Recalcitrant dissolved organic matter in the ocean: Major contribution of small amphiphilics. *Marine Chemistry* 82, 115–123. # **21 most requested article 2003 Marine Chemistry**.

2001

- 9 **Dittmar T**, Fitznar HP and Kattner G (2001) Origin and biogeochemical cycling of organic nitrogen in the eastern Arctic Ocean as evident from D- and L-amino acids. *Geochimica et Cosmochimica Acta* 65, 4103–4114.
- 8 **Dittmar T** and Birkicht M (2001) Regeneration of nutrients in the northern Benguela upwelling and the Benguela-Angola front areas. *South African Journal of Science* 97, 239–246.
- 7 **Dittmar T** and Lara RJ (2001) Do mangroves rather than rivers provide nutrients to coastal environments south of the Amazon River? Evidence from long-term flux measurements. *Marine Ecology Prog. Ser.* 213, 67–77.
- 6 **Dittmar T** and Lara RJ (2001) Molecular evidence for lignin degradation in sulfate reducing mangrove sediments (Amazônia, Brazil). *Geochimica et Cosmochimica Acta* 65, 1403–1414.
- 5 **Dittmar T** and Lara RJ (2001) Driving forces behind nutrient and organic matter dynamics in a mangrove tidal creek in north Brazil. *Estuarine, Coastal and Shelf Science* 52, 249–259.
- 4 **Dittmar T**, Lara RJ and Kattner G (2001) River or Mangrove? Tracing major organic matter sources in tropical Brazilian coastal waters. *Marine Chemistry* 73, 253–271. # **4 most requested article 2002 Marine Chemistry**.

1999-2000

- 3 Szlafsztein CF, Cohen M, Lara RJ, and **Dittmar T** (2000) Digital elevation model as a GIS tool for the analysis of mangrove coasts, Amazon region, Brazil. *Internat. J. of Environm. Creation* 3, 31–41.
- 2 Lara RJ and **Dittmar T** (1999) Nutrient dynamics in a mangrove creek (North Brazil) during the dry season. *Mangroves and Salt Marshes* 3, 185–195.
- 1 Cohen MCL, Lara RJ, Ramos JFF and **Dittmar T** (1999) Factors influencing the variability of Mg, Ca and K in waters of a mangrove creek in Bragança, North Brazil. *Mangroves and Salt Marshes* 3, 9–15.

Teaching at Florida State University**Courses taught:**

OCE 1001	Elementary Oceanography (undergraduate, 3 credit hours)
ISC 2003	Global Change, Its Scientific and Human Dimensions (undergraduate, 3 credit hours)
OCC 5930	Field Studies in Marine Biogeochemistry (graduate, 3 credit hours)
OCC 5930	Coastal Oceanography and Marine Field Methods (graduate, 3 credit hours)
OCC 5415	Marine Geochemistry, section on Global Biogeochemical Cycles (graduate, 1 credit hour)

Major advisor:

Ana C. Friedrich (FSU, Department of Oceanography, applied for Fall 2007, Ph.D.)
Ji Young Paeng (FSU Department of Oceanography, current student, M.Sc.)
Agung Suryaputra (FSU Department of Oceanography, current student, M.Sc.)
Brandon Bottomley (FSU Department of Oceanography, degree received in Fall 2006, M.Sc.)

Committees:

Matthias Laschet (FSU, Department of Oceanography, PhD)
Thomas M. Gihring (FSU, Department of Oceanography, PhD)
Lindsay Scheef (FSU, Department of Oceanography, PhD)
Clifton S. Buck (FSU, Department of Oceanography, PhD)
Sarahkeith Valentine (FAMU, Environmental Science Institute, PhD)
Alex Fernandes (FSU, Department of Oceanography, graduated in 2006, PhD)
Marcelo Dottori (FSU, Department of Oceanography, graduated in 2006, PhD)
Lori Beth Trembley (FSU, Department of Chemistry and Biochemistry, graduated in 2006, PhD)
Sukalyan Chakraborty (University of Kalyani, India, graduated in 2005, PhD)
Yongxue Ding (FSU, College of Engineering, graduated in 2005, PhD)
Michael Schilling (FSU, Department of Chemistry and Biochemistry, graduated in 2004, PhD)

Miscellaneous**Reviewer for the following scientific journals (in alphabetical order):**

1. Archiv für Hydrobiologie
2. Biogeochemistry
3. Biogeosciences
4. Bulletin of Marine Science
5. Deep Sea Research II
6. Environmental Forensics Journal
7. Environmental Pollution
8. Estuaries
9. Estuarine, Coastal and Shelf Science
10. Geochimica et Cosmochimica Acta
11. Geophysical Research Letters
12. Global Biogeochemical Cycles
13. Limnology and Oceanography
14. Marine Chemistry
15. Organic Geochemistry
16. Science Asia
17. Science of the Total Environment
18. South African Journal of Science
19. Wetlands Ecology and Management

Reviewer for the following funding agencies:

National Science Foundation (NSF)
National Oceanic and Atmospheric Administration (NOAA)
Petroleum Research Fund (American Chemical Society)
Northern Gulf Institute (NGI, NOAA)