



Curriculum Vitae

Michael Gonsior

Personal data

Michael Gonsior

Born 1972
in Germany

Current address:

1 Williams street
Solomons, MD-20688
USA



USA: +1 410-326-7245

gonsior@umces.edu

Major Fields of Scientific Interest

- Biogenesis of natural organic matter.
- The reactivity and chemical composition of terrestrial and marine dissolved organic matter.
- Application of highly advanced non-target analytical techniques to decipher the complexity of biogeochemical cycles.
- The geochemical and biogeochemical nature of sulfur in extreme environments.
- The fate and transport of complex anthropogenic pollutants in aquatic systems (e.g. dispersion of surfactants in the coastal ocean).
- Climate change and the biogeochemical consequences for our polar regions.
- Marine debris research and the influence of plastics on open ocean surface chemistry.

Education

Ph.D. May 2008. Aquatic Biogeochemistry. Otago University, Dunedin, New Zealand.
Dissertation: *“Characterization of Dissolved Organic Matter in New Zealand Natural Waters”*
Supervision: Prof. Barrie M. Peake

M.Sc. (German: “Diplomingenieur”) February 2004. Environmental Protection Engineering. Technical University Dresden, Germany. Thesis topic: *“Microbiological and biochemical processes in soils of the tropical mountain rainforest in South Ecuador”*
Supervision: Prof. Makeschin

M.Sc. (German: “Diplomchemiker (Umwelt)”) October 1999. Environmental Chemistry. Friedrich Schiller University Jena, Germany. Thesis topic: *“Characteristic Behaviour and Quantitative Analysis of Polycyclic Aromatic Hydrocarbons in Water analyzed with High Performance Liquid Chromatography”* (thesis work carried out at Dalhousie University, Halifax, Canada)
Supervision: Dr. Guy (Dalhousie University, Halifax, Canada) and Prof. Einax

Undergraduate Studies (German: “Vordiplom”) December 1996. Pure and Applied Chemistry. Rheinisch Westfaelisch Technische Hochschule (RWTH), Aachen, Germany.

Publications

- 2011** **Gonsior, M.**; M. Zwartjes; W. J. Cooper; W. Song; K. P. Ishida; L. Y. Tseng; M. K. Jeung; D. Rosso; N. Hertkorn and P. Schmitt-Kopplin. Molecular Characterization of Effluent Organic Matter identified by ultrahigh resolution Mass Spectrometry. *Water Research*. 2011,45, 2943-2953.
- Gonsior, M.**; B. M. Peake; W. T. Cooper; D. Podgorski; J. D'Andrilli; T. Dittmar; W. J. Cooper. Characterization of dissolved organic matter across the Subtropical Convergence off the South Island, New Zealand. *Marine Chemistry*. 2011, 122, 99-110.
- 2010** Bones, D. L., D. K. Henricksen, S. A. Mang, **M. Gonsior**, A. P. Bateman, T. B. Nguyen, W. J. Cooper, and S. A. Nizkorodov. Appearance of strong absorbers and fluorophores in limonene-O₃ secondary organic aerosol due to NH₄⁺ -mediated chemical aging over long time scales, *Journal of Geophysical Research*. 2010, 115.
- Kowalczyk, Piotr; W. J. Cooper; M. J. Durako; A. E. Kahn; **M. Gonsior** and H. Young. Characterization of dissolved organic matter fluorescence in the South Atlantic Bight with use of PARAFAC model: Relationships between fluorescence and its components, absorption coefficients and organic carbon concentrations. *Marine Chemistry*. 2010, 118, 22-36.
- 2009** Kowalczyk, Piotr; M. J. Durako; H. Young; A. E. Kahn; W. J. Cooper and **M. Gonsior**. Characterization of dissolved organic matter fluorescence in the South Atlantic Bight with use of PARAFAC model: Interannual variability. *Marine Chemistry*. 2009,113, 182-196.
- Gonsior, M.**; Barrie M. Peake; William T. Cooper; David Podgorski; Juliana D'Andrilli and William J. Cooper. Photochemically Induced Changes in Dissolved Organic Matter Identified by Ultrahigh Resolution Fourier Transform Ion Cyclotron Resonance Mass Spectrometry. *Environmental Science & Technology*. 2009, 43(3), 698-703.
- 2008** Cooper, William J.; W. Song; **M. Gonsior**; D. Kalnina; B. M. Peake and S. P. Mezyk. Recent advances in structure and reactivity of dissolved organic matter in natural waters. *Water, Science and Technology: Water Supply*, 2008, 8 (6), 615-623.
- Gonsior, M.**; Peake, B. M.; Jaffe, R.; Cooper, W. J.; Kahn, A.; Young, H.; Kowalczyk, P. Spectral characterization of chromophoric dissolved organic matter (CDOM) in a fjord (Doubtful Sound, New Zealand). *Aqua. Sci.* 2008, 70 (4), 397-409.

Research and Work Experience

- 04/2012 – present Tenure-track assistant professor, University of Maryland, Center for Environmental Science, Chesapeake Biological Laboratory, USA.
- 03/2011 – 03/2012 *Post-doctoral Scholar*. Linköping University, Department of Thematic Studies, Water and Environmental Studies, Linköping, Sweden.
- 07/2010 – 02/2011 *Scientific Consulting* for the ultrahigh resolution mass spectrometry and high field nuclear magnetic resonance spectroscopy facility located at the Helmholtz Zentrum in Munich, Germany.
- 01/2010 – 07/2010 *Field Coordinator*. Coordination of large scale irrigation schemes and environmental support in East Africa.
- 01/2008 – 12/2009 *Post-doctoral Scholar* with William J. Cooper.
 Urban Water Research Center. Department of Civil and

- Environmental Engineering. University of California, Irvine.
 06/2004 – 10/2007 *Research assistant* with Barrie M. Peake and John Watson (ChemSearch). Chemistry Department. Otago University, Dunedin, New Zealand.
 12/2000 – 12/2003 *Research assistant* with Franz Makeschin. Department of Soil Science. Technical University of Dresden/Germany.
 01/1999 – 08/1999 *Research Assistant and M.Sc. thesis work* with Dr. Guy. Chemistry Department. Dalhousie University, Halifax, Canada.
 03/1998 – 07/1998 *Research assistant*. University of Jena, Germany.
 02/1997 – 06/1997 *Research assistant* with Christine Davidson. Department of Chemistry. Strathclyde University, Glasgow, Scotland.

Teaching and Outreach Experience

- 09/2011 – 12/2011 *Guest lectures and supervision of a Bachelor thesis* at Linköping University
 01/2010 – 07/2010 *Field Coordinator*. Training and technology transfer in irrigation, environmental awareness, water and agriculture to the rural communities of Kenya and Tanzania.
 2009 – 2010 *Vice president of student chapters*. Engineers without Borders, Orange County Professional Chapter.
 2009 *Guest Lecturer* (post-graduate course) in environmental/analytical Chemistry.
 05/2006 – 2008 *Core-member* of the New Zealand Youth Steering Committee (YSCNZ) for the International Polar Year (IPY): Design and organization of the nationwide outreach programme “Polar Contests” for secondary high schools.
 06/2004 – 07/2007 *Lab demonstrator* in 100 level chemistry, 200 level environmental chemistry and 300 level aquatic chemistry at Otago University, Dunedin, New Zealand.
 12/2000 – 12/2003 *Teaching Assistant*. Design and layout of scripts for lectures in soil science, land use and soil protection.
 2003 *Mentor* of bachelor students under field work conditions in the rainforest in Ecuador.
 2003 *Guest Lecturer* in “Basics of Soil Science” at the University of Loja, Ecuador and guiding field trips for Ecuadorian students into the mountain rainforest.
 1998 – 2002 Supervising secondary high school students during three weeks summer camps in Switzerland.

Field Experience

- 05/2011 Sampling Coastal Lagoons in Brazil.
 01/2011 Atlantic Ocean, Atlantic transect aboard the M/Y Lone Ranger. Ultrahigh resolution mass spectrometric analyses of surface waters.
 10/2010 Sampling hot springs in Yellowstone National Park.
 08/2009 – 09/2009 North Pacific Gyre. (S/V Kaisei). Co-Principle Investigator: The Plastic Ocean and Project Kaisei.
 10/2009 Sampling hot springs in Yellowstone National Park. Principle

- Investigator (PI) for hot springs biogeochemical research in Yellowstone National Park.
- 07/2009 Sargasso Sea, Bermuda. (R/V Atlantic Explorer, PI: Maureen Conte). Ultrahigh resolution mass spectrometric analyses of water masses sampled at BATS.
- 11/2008 – 12/2008 East Atlantic Transect. (R/V Polarstern (ANT XXV-I), PI: Gerhard Kuttner and Boris Koch). Multianalytical characterization of natural organic matter.
- 07/2008 Godhåbsfjord, Nuuk, Greenland. (Danish Coast Guard ice breaker). Collaborative research in Arctic marine biogeochemistry.
- 10/2007 – 11/2007 Antarctica, Scott Base. (PI: Miles Lamare). Collaborative research in marine biogeochemistry and marine biology.
- 06/2007 Fiordland National Park, New Zealand. (R/V Polaris II). PI of the research cruise “Biogeochemical characteristics of New Zealand fjords”.
- 09/2003 – 11/3003 Estacion Scientifica San Francisco, Loja, Ecuador. (PI: Franz Makeschin). Chemical characteristics of the soils of the mountain rainforest in Southern Ecuador.
- 02/2003 – 03/2003 Estacion Scientifica San Francisco, Loja, Ecuador.
- 09/2002 – 10/2002 Estacion Scientifica San Francisco, Loja, Ecuador.
- 03/2002 – 06/2002 Estacion Scientifica San Francisco, Loja, Ecuador.

Languages

Fluent German Fluent English Good Spanish basic French

Certificates and Licences

Quality control in analytical chemistry; Driving licence; Driving licence for motor boats; PADI advanced open water dive certificate

Extracurricular Activities

scuba diving; paragliding; cycling; hiking; fly fishing; travelling in different countries and experiencing other cultures; outreach and educational work with teenagers; Engineers without borders and support for developing countries.

Attended Conferences

IWA, 2011 Specialty conference: “Natural Organic Matter Research - From Source to Tap and beyond”, 2011

Oral presentations:

- 1) Chemistry of Effluent Organic Matter: A Non-Target Approach of Analyzing the Complex DOC in Secondary Treated Effluent.
- 2) Molecular Characteristics and Differences of Effluent Organic Matter Treated by Integrated Fixed Film Activated Sludge (IFAS), Activated Sludge and Dentrification.
- 3) Characteristics of Natural organic Matter in Different Yellowstone Hot Springs.

ASLO, Orlando, 2008

Poster: Gonsior M., Peake B. M., Cooper J. W., Cooper T. W., 2008, Photodegradation of DOM analysed by ESI-FT-ICR-MS.

ASLO, Santa Fe, 2007

Poster: Gonsior M., Peake B. M., Cooper J. W., 2007, Photodegradation of CDOM in Freshwater – Seawater Interfaces.

Oral presentation:

Characterization of DOM in Estuarine Mixing using ESI-FT-ICR-MS.

PacifiChem, Hawaii, 2005

Poster: Gonsior M., Peake B. M., Cooper J. W., 2005, Singlet Oxygen photochemical production in a fjord: Doubtful Sound, New Zealand.

Seminars

2011 Mid-term seminar, Linköping University, Sweden
2011 Uppsala University, Sweden
2011 Chesapeake Biological Laboratory, Center for Environmental Sciences, University of Maryland, USA
2010 MARUM, Bremen University
2009 Helmholtz Zentrum Munich, Germany
Bermuda Institute of Ocean Sciences (BIOS), Bermuda
Biology Department, Virginia Commonwealth University (VCU), USA
Department of Earth System Science, University of California, Irvine (UCI), USA
2008 Department of Chemistry and Biochemistry, Florida State University (FSU), USA
Chemistry Department, Otago University, New Zealand

Awards

Otago University Scholarship (3 yr; 20 000 \$NZ per annum)
Chemistry Dep., Otago University Scholarship (2 months; 1 300 \$NZ)
Otago University publication bursary (5 000 \$NZ)

Names of References

Prof. Barrie M. Peake (Ph.D. supervisor) bpeake@chemistry.otago.ac.nz
Prof. William J. Cooper (Post Doc Advisor) wcooper@uci.edu
Dr. David Bastviken david.bastviken@liu.se
Dr. Philippe Schmitt-Kopplin schmitt-kopplin@helmholtz-muenchen.de
Dr. Norbert Hertkorn hertkorn@helmholtz-muenchen.de
Prof. Dr. Boris Koch Boris.Koch@awi.de