

## CURRICULUM VITAE: Rita Wania

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### EDUCATION

**Sep 2003 – Nov 2007 (PhD)** *Department of Earth Sciences, University of Bristol, UK*

During my PhD (*Modelling northern peatland surface processes, vegetation dynamics and methane emissions*) I incorporated permafrost and peatland dynamics into the LPJ dynamic global vegetation model, as well as developing a new methane model integrated with the vegetation model. PhD advisers: Professor Colin Prentice & Dr Edward Hornibrook.

**Oct 1995 – Jun 2001 (MSc)** *Institute of Ecology and Conservation Biology, University of Vienna, Austria*

I obtained a degree in Ecology ("Magistra der Naturwissenschaften") with a focus on plant ecology. During my diploma thesis (*Nitrogen Cycling in the Canopy of a Neotropical Rainforest*), supervised by Dr Wolfgang Wanek, I further specialised on plant physiology and tropical ecology.

### FURTHER EDUCATION

**Jan – Aug 2003** *Department of Biology, University of Bergen, Norway*

As a fellow at the Marie Curie Training Site in Bergen, I was trained in statistical modelling of environmental data using different approaches. This was part of the *Quantitative palaeoclimatic reconstruction from lake sediments* project under the guidance of Professor John Birks and Dr Einar Heegard.

**Oct 1998 – Jun 1999** *Vienna University of Economics and Business, Austria*

This course enabled me to become a certified appointee of waste management. It covered wide-ranging topics such as sustainable development, environmental laws and environmental impact assessments.

### WORK EXPERIENCE

**Jan 2009 – ongoing (Post-doctoral Fellow)** *Earth and Ocean Sciences, University of Victoria, BC, Canada*

I am currently working together with Dr Katrin Meissner on the implementation of the terrestrial nitrogen and phosphorus cycle in the UVic Earth System Climate Model. (Dr Meissner has recently moved to the University of New South Wales, Australia.)

**Dec 2007 – Dec 2008 (Research Associate)** *Department of Earth Sciences, University of Bristol, UK*

I worked within the EU-Project HYMN (*Hydrogen, Methane and Nitrous oxide: Trend variability, budgets and interactions with the biosphere*) with Professor Colin Prentice. My role in the project was to provide methane emissions from high latitude peatlands and to assist with the development of a global budget of methane emissions and methane uptake. I also worked on the quantification of global nitrous oxide emissions from the terrestrial biosphere.

**Sep 2003 – Nov 2007 (Teaching Assistant)** *Department of Earth Sciences, University of Bristol, UK*

At the same time as doing my PhD thesis, I was the Environmental Geoscience teaching assistant in the department, a role that occupied about a quarter of my time. I was responsible for running the Environmental Geoscience laboratory, organising field trip equipment, instructing demonstrators and students on laboratory equipment such as the Ion Chromatograph and Atom Absorption Spectrometer, teaching on field trips and tutoring undergraduates.

**Sep 1994 – Oct 1995 (Au Pair)** I lived with a family in Virginia, USA, and looked after three boys, aged 4, 11 and 13.

## EDITORIAL AND REVIEWING WORK

I am member of the Editorial Advisory Board for *Global Change Biology*. Since 2006, I have reviewed manuscripts for *Global Change Biology* (×9), *Global Biogeochemical Cycles* (×2), *Geophysical Research Letters* (×2), *Journal of Geophysical Research – Biogeosciences*, *Computers and Geosciences* and *Biosciences Horizons*. I have also reviewed a proposal for COST – a framework for Europe-wide cooperation and coordination of national research activities.

## PEER-REVIEWED PUBLICATIONS

- [1] **R. Wania**, I. Ross, I. C. Prentice (accepted) Implementation and evaluation of a new methane model within a dynamic global vegetation model: LPJ-WHyMe v1.3, *Geoscientific Model Development Discussions*.
- [2] A. Arneeth, S. Sitch, A. Bondeau, K. Butterbach-Bahl, P. Foster, N. Gedney, N. de Noblet-Ducoudré, I. C. Prentice, M. Sanderson, K. Thonicke, **R. Wania**, S. Zaehle (accepted) From biota to chemistry and climate: Towards a comprehensive description of trace gas exchange between the biosphere and atmosphere. *Biogeosciences*.
- [3] **R. Wania**, I. Ross, I. C. Prentice (2009) Integrating peatlands and permafrost into a dynamic global vegetation model: I. Evaluation and sensitivity of physical land surfaces processes, *Global Biogeochemical Cycles*, GB3014, doi:10.1029/2008GB003412.
- [4] **R. Wania**, I. Ross, I. C. Prentice (2009) Integrating peatlands and permafrost into a dynamic global vegetation model: II. Evaluation and sensitivity of vegetation and carbon cycle processes vegetation dynamics, *Global Biogeochemical Cycles*, GB3015, doi:10.1029/2008GB003413.
- [5] **R. Wania**, P. Hietz, W. Wanek (2002) Natural <sup>15</sup>N abundance of epiphytes depends on the position within the forest canopy: source signals and isotope fractionation. *Plant, Cell and Environment* 25(4) 581-589.
- [6] P. Hietz, W. Wanek, **R. Wania** and N. Nadkarni (2002). <sup>15</sup>N natural abundance in a montane cloud forest canopy as an indicator of nitrogen cycling and epiphyte nutrition. *Oecologia* 131 (3) 350-355.

## PUBLICATIONS IN PREPARATION

- [1] **R. Wania**, M. Jolleys, W. Buytaert. Methane emissions from the Andean páramo? To be submitted to *Biogeosciences*.
- [2] **R. Wania**, I. Ross, I. C. Prentice. Methane emissions from northern peatlands in the 21st century. To be submitted to *Global Change Biology*.
- [3] P. A. Miller, **R. Wania**, B. Smith, M. T. Sykes, A. Wolf. Modelling climate change impacts on high-latitude terrestrial wetland ecosystems. To be submitted to *Global Biogeochemical Cycles*.
- [4] P. A. Miller, **R. Wania**, P. Kuhry and co-authors. Present-day and future carbon fluxes from Northwestern Russian tundra — An integrative approach. To be submitted to *Journal of Geophysical Research – Biogeosciences*.
- [5] P. A. Miller, H. Seppä, H. Renssen, **R. Wania**, J. S. Salonen, V. Jones, A. Self, T. Virtanen, M. T. Sykes. Drivers of Holocene treeline change in northern Russia. To be submitted to *Journal of Geophysical Research – Biogeosciences*
- [6] J. Schneider, M. Gazovic, J. Wu, L. Kutzbach, M. Wilmking, S. Zagirova, P. Miller, **R. Wania**, S. Susiluoto, T. Virtanen. Integrated Taiga carbon fluxes in NW Russia — Present and future. To be submitted to *Journal of Geophysical Research – Biogeosciences*
- [7] L. P. Bobylev, I. A. Sudakov, **R. Wania**, K. G. Gribanov, R. Imasu, W. Bleuten, S. A. Beresnev, V. A. Poddubny, V. I. Zakharov. Methane release from the Arctic and sub-Arctic zone of Siberia. To be submitted to *Journal of Geophysical Research – Biogeosciences*.

## OTHER PUBLICATIONS

- [1] **R. Wania**, M. Jolleys, W. Buytaert (2009). A previously neglected methane source from the Andean páramo? *iLEAPS Newsletter*, 7, 58-59.
- [2] **R. Wania**, I. Ross, I. C. Prentice (2009). Integrating permafrost, peatlands and methane dynamics into a dynamic global vegetation model. *iLEAPS Newsletter*, 6, 32-33.
- [3] **R. Wania** (2007). Modelling northern peatland land surface processes, vegetation dynamics and methane emissions. *PhD thesis*, University of Bristol, U.K.
- [4] **R. Wania**, C. Prentice, S. Harrison, E. Hornibrook, N. Gedney, T. Christensen, R. Clymo. (2004). The role of natural wetlands in the global methane cycle. *EOS* 85, 466.
- [5] **R. Wania** and W. Wanek. (2003). Seasonality of nitrogen source availability of epiphytes in a tropical lowland rainforest. What's up? *The Newsletter of the International Canopy Network* 9 (4) 4-5.
- [6] **R. Wania** (2001). Nitrogen cycling in the canopy of a neotropical rainforest, Costa Rica. *Diploma thesis*, University of Vienna, Austria.

## TALKS

- Sep 2009** **R. Wania** I. Ross, I. C. Prentice  
Introducing northern peatlands into a terrestrial carbon cycle model. Peatlands in the Global Carbon Cycle, Prague, Czech Republic. (Invited talk)
- Jul 2009** **R. Wania** I. Ross, I. C. Prentice  
Methane emissions from northern in the 21st century. MOCA-09 - Our warming planet, Montréal, Canada.
- Apr 2008** **R. Wania** I. Ross, I. C. Prentice, E. R. C. Hornibrook  
Modelling methane emissions from peatlands using a dynamic global vegetation model: achievements and limitations. University of Bern, Switzerland. (Invited talk)
- Apr 2008** **R. Wania** I. Ross, I. C. Prentice  
Can a new methane model help to fill the gaps in methane emissions data from permafrost areas. EGU, Vienna, Austria. (Solicited)
- Feb 2008** **R. Wania** I. Ross, I. C. Prentice  
Modelling northern peatlands land surface processes, vegetation dynamics and methane emissions. ENIGMA Wetland Workshop, Potsdam, Germany. (Invited talk)
- Oct 2007** **R. Wania** I. Ross, E. R. C. Hornibrook, C. Prentice  
Integrating permafrost, peatlands and methane dynamics into the LPJ-DGVM. Marie Curie-iLEAPS Workshop, Helsingborg, Sweden
- Jun 2007** **R. Wania** I. Ross, I. C. Prentice  
Peatlands and permafrost in LPJ-WHy. JULES meeting, Exeter, UK
- Apr 2007** **R. Wania** I. Ross, I. C. Prentice  
Sensitivity of northern peatland greenhouse gas emissions to climate change. Carbon in Peatlands Conference, Wageningen, The Netherlands
- Jun 2006** **R. Wania**, I. C. Prentice, I. Ross, P. J. Valdes  
Modelling methane emissions from high latitude peatlands using LPJ. Guest seminar at the GeoBiosphere Center at the University of Lund, Sweden.
- Apr 2006** **R. Wania**, I. Ross, I. C. Prentice  
Modelling methane emissions from boreal ombrotrophic peatlands. EGU, Vienna, Austria.
- Jul 2003** **R. Wania** and W. Wanek  
Seasonality of epiphyte nitrogen source availability in a neotropical rainforest, Costa Rica. British Ecological Society Special Symposium and Annual Meeting of the Association for Tropical Biology and Conservation, University of Aberdeen, United Kingdom.

- Feb 2002** R. Wania, P. Hietz and W. Wanek  
Nitrogen nutrition of vascular epiphytes in a tropical lowland rainforest: Application of natural <sup>15</sup>N abundance. 15th Annual Meeting of the Tropical Ecology Society, University of Göttingen, Germany.
- Nov 2001** R. Wania, P. Hietz and W. Wanek  
Application of natural <sup>15</sup>N abundance in nitrogen cycling studies of tropical rainforests. 3rd Viennese Workshop on Stable Isotopes in Biological and Environmental Sciences, Vienna, Austria.

## WORKSHOPS

- May 2009** Peatnet workshop on '*Peatlands and global carbon cycle modeling*', Durham, New Hampshire.
- Oct 2005** QUEST international workshop on '*Dynamic Global Vegetation Models and Plant Functional Types*', Exeter, United Kingdom.
- Jun 2004** QUEST international workshop on '*Wetlands and methane emissions*', Bristol, United Kingdom. Me and Colin Prentice organised this workshop, also see EOS article above under *Other publications*.

## RECENT POSTERS

- Nov 2008** R. Wania, M. Jolleys, W. Buytaert  
Methane emissions from the Andean Páramo: A previously neglected methane source?. Marie-Curie iLEAPS Conference on Feedbacks-Land-Climate Dynamics – Key Gaps, Hyeres, France.
- Aug 2007** R. Wania, I. Ross, I. C. Prentice  
Towards the integration of permafrost and peatlands into a dynamic global vegetation model. 2nd International Conference on Earth System Modelling, Hamburg, Germany.
- Jun 2006** R. Wania, I. C. Prentice, I. Ross, P. J. Valdes  
Modelling modern and Holocene land surface processes and methane emissions in high latitudes. HOLIVAR Open Science Meeting, London, UK and ESF–JSPS Frontier Science Conference for Young Researchers on Climate Change, Nynashamn, Sweden.

## TEACHING EXPERIENCE

- Jan–Apr 2010** EOS 550 *The Ocean-Atmosphere System*, University of Victoria, Canada  
This graduate course covers the components and dynamics of the climate system. I will cover biogeophysical and biogeochemical land-atmosphere interactions, the terrestrial carbon cycle, vegetation modelling and geo-engineering. (Co-taught with Dr Kirsten Zickfeld.)
- Nov 2008** EASC M0016 *Frontiers in Earth Sciences*, University of Bristol, UK: *Lecture and discussion*  
4th year Environmental Geoscience and MSc Course in Earth System Science. I lectured on the Ruddiman methane hypothesis and led a discussion on the same topic.
- Oct 2008** EASC M0027 *Introduction to Earth System Processes*, University of Bristol, UK: *Lectures*  
MSc Course in Earth System Science. I taught two lectures on terrestrial emissions and uptake of trace gases and aerosols.
- 2003–2008** EASC 20018 *Environmental Geoscience Field Skills*, University of Bristol, UK: *Field trip*  
2nd and 3rd year Environmental Geoscience field trip to Tenerife. I taught the plant ecology and biodiversity component six times over the course of five years.
- 2003–2006** EASC 20016 *Environmental Analyses*, University of Bristol, UK: *Demonstrating*  
2nd year Environmental Geosciences practical. I supervised students in the analytical laboratory course.
- 2003–2005** *Tutoring*, University of Bristol, UK  
I was tutor for six first-year students in 2003/04 and for 13 students in 2004/05.

## **SUPERVISED STUDENTS**

**Spring 2008** I supervised the final project of Matthew Jolleys, an Environmental Geoscience MSci student, on *Potential Methane Emissions from the Páramo Grasslands of the Andes*. After his graduation, Matthew secured a PhD position at the University of Leeds, UK.

## **AWARDS & DISTINCTIONS**

**2002** Scholarship for academic performance given by the state of Lower Austria (€1.800)

**2001** Scholarship for academic performance given by the Dean of the Natural Science Faculty, University of Vienna, Austria (€727)

**2000** Support for diploma thesis with high expenses given by the Dean of the Natural Science Faculty, University of Vienna, Austria (€1.453)

**2000** Support for short-term scientific work conducted abroad given by the Austrian Federal Ministry of Education, Science and Culture (€2.253)

**1998** Support for field-specific courses given by the Austrian Ministry of Science and Transport (€1.090)

## **ATTENDED COURSES (not part of any degree requirements)**

**Mar 2008** Profiling and benchmarking, Bristol, UK

**Mar 2008** Linux Part 2, Bristol, UK

**Mar 2008** Fortran90 Part 2, Bristol, UK

**Sep 2005** Earth System Science Summer School (ES4), Bristol, UK

**Jun 2005** Short intensive course in wetland water management, Poland

**Feb 2005** Fortran programming course (2 months), University of Bristol, UK

**Nov 2004** Hydrological modelling (3 months), University of Bristol, UK

**Oct 2004** Engineering Maths I (5 months), University of Bristol, UK

**Aug 2004** 2nd ENVISAT Summer School on *Earth System Monitoring and Modelling*, organised by ESA, Frascati, Italy

**Jul 2004** HOLIVAR course on *Quantitative climate reconstruction and data-model comparisons*, sponsored by ESF, Ghent, Belgium

**Mar 2003** Numerical analysis of biological and environmental data, University College London, UK

**Jul 1998** Darwin Field Course in Tropical Biology, Kibale Forest NP, Uganda organised by the Tropical Biology Association (Cambridge, UK).

## **OUTREACH ACTIVITIES**

**Mar 2008** *Science Alive – Bristol*  
I organised part of the exhibition by the School of Geographical Sciences, which involved raising awareness for carbon dioxide emissions.

**May 2007** *Climate change Q&A – Sustainable Redland*  
Climate change talk for local sustainability group

## **TECHNICAL SKILLS**

Programming: Fortran 77, Perl, CDO, NCO tools, Matlab

Visualization: Ferret, NCL

Other software: Emacs, L<sup>A</sup>T<sub>E</sub>X, Subversion, CVS, R, Gimp, Inkscape

Platforms: Linux, Mac OS X

## **LANGUAGES**

German: native speaker

English: read, write and speak fluently

Spanish: read and speak to a basic level

French: read to a basic level

## **OTHER QUALIFICATIONS**

VHF Radio – Restricted Operator Certificate

## **VOLUNTEERING**

**2009/10** Recently, I have joined Special Olympics and I am now Head Coach for Alpine Skiing in Victoria.

**2002** I lived with a family on the slopes of Kilimanjaro and helped to plant trees for three months for the African Blackwood Conservation Project, Tanzania.

**1995–1998** I was a member of the local group of Greenpeace in Vienna.

## **INTERESTS**

I enjoy sports and outdoor activities such as mountain biking, road cycling, sea kayaking, hiking and skiing. In 2006, I switched to a vegan diet to minimise my impact both on animal suffering and environmental pollution. Photography is one of my favourite hobbies, especially when travelling and exploring foreign landscapes. Before I became aware of the threats of climate change, I travelled widely, since I enjoy exploring new countries and meeting people. Between 1992 and 2002, I travelled in South America, Australia, Africa and Europe. During 2003–2008, I enjoyed exploring Europe by trains and became a strong advocate of train travel.