

## Prof. Dr. Antje Boetius

### Date of Birth

05.03.1967

### Nationality

German

### Business Address

HGF-MPG Joint Research Group on Deep Sea Ecology and Technology (group leader)  
Alfred Wegener Institute for Marine and Polar Research  
Am Handelshafen 12, D-27515 Bremerhaven

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Professor of Geomicrobiology, Geosciences FB5  
MARUM, University Bremen  
28359 Bremen

### Private Address

Osterdeich 74, D-28205 Bremen  
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### University Education

1993 - 1996	University of Bremen, Bremen, Germany
<i>Doctorate in Biology</i>	
1986 - 1992	University of Hamburg, Hamburg, Germany
<i>Diplom in Biology</i>	

### Academic Career

Since May 2010 External Scientific Member of the Max Planck Society  
Since March 2009 Professor of Geomicrobiology, University Bremen  
Since December 2008 Leader of the HGF-MPG Joint Research Group on Deep Sea Ecology and Technology, AWI  
June 2008-Dec 2008 Full Professor for Microbiology, Jacobs University  
Since Nov 2003 Leader of the "Microbial habitat" group, MPI Bremen  
*Research on biogeochemistry, transport processes and microbial processes in benthic environments*  
Sep 2003-June 2008 Associate Professor of Microbiology, Jacobs University Bremen  
Sep 2001-Sep 2003 Assistant Professor of Microbiology, International University Bremen  
*Teaching in biology (major and non-major), and transdisciplinary university study courses*  
Feb. 2001-Oct 2003 AWI for Polar and Marine Research, Bremerhaven  
*Permanent research faculty, coordination of national and international projects on microbial turnover of methane above marine gas hydrate and at cold seeps*  
1999-2001 Max Planck Institute for Marine Microbiology, Bremen  
*Research associate (Postdoc), since 2001 guest researcher*  
1996-1999 Institute for Baltic Sea Research, Warnemünde  
*Research associate (Postdoc)*  
1993-1996 AWI for Polar and Marine Research, Bremerhaven  
*Research associate (PhD)*  
1990 - 1992 Institute for Hydrobiology and Fishery Res., Hamburg  
*Lab assistant (student contracts)*  
1989 - 1990 Scripps Inst. of Oceanography, San Diego, CA  
*Lab assistant*

## International Experience

2004 Invited Professor of the University Pierre et Marie Curie (Paris 6)  
1989 – 1991 Graduate School of Scripps Institution of Oceanography, Academic exchange program with UCSD, La Jolla, California, USA

## Research

### Special fields of expertise:

Methane biogeochemistry  
Ecology of chemosynthetic habitats  
Microbial biodiversity  
Microbial processes of early diagenesis in deep-sea sediments  
Effects of pressure and temperature on microbial processes  
Pelago-benthic coupling in Polar Seas

### Additional fields of interest:

Biodiversity  
General Microbial Ecology  
Microbial symbiosis  
Deep-sea ecology  
Marine carbon cycle

### Current funding:

2011-2014 7 FP EU project ECO2  
2009-2012 Marie Curie Action "Initial Training Networks" – ITN SenseNet  
2009-2012 BMBF project BIOACID  
2009-2010 DFG MERIAN expedition HOMER 1 + 2  
2009-2011 7 FP EU project HYPOX (coordinator)  
2009-2012 7 FP EU project HERMIONE (WP leader)  
2009-2011 7 FP EU project EUROFLEETS  
2007-2010 ESF EUROCORES EuroDeep "Chemeco"  
2009-2013 MARUM Excellence Cluster Project "Hydrothermal Vents"  
2007-2011 EU 6<sup>th</sup> FP NoE ESONET  
(Demonstration Mission "LOOME" (Long term observation of mud volcanism))  
2007-2012 Graduate School of the Excellence Initiative "GLOMAR"  
2006-2010 ESF EUROCORES EuroDiversity "MicroSystems"  
2006-2010 CNRS GDRE DIWOOD (Collaboration Univ Pierre et Marie Curie, CNRS, MPI)

### Previous projects:

2005-2009 DFG Research Center RCOM II, Teilbereich E Fluid and gas seepage along continental margins: structures, processes and budgets  
2008 DFG METEOR expedition Guineco  
2005-2009 EU 6<sup>th</sup> FP IP HERMES "Hotspot ecosystem research on margins of Europe's seas"  
2007 DFG METEOR expedition MICROHAB (M72/2)  
2007 DFG METEOR expedition BIONIL (M70/2)  
2005-2008 BMBF project MUMM "Microbial turnover of methane above marine gas hydrate"  
2003-2007 ESF project "MEDIFLUX - An integrated study of fluid seepage through the seabed of the Nile deep-sea fan "  
2003-2006 6th FP EU project STREP "EXOCET – Extreme ecosystem studies in the deep Ocean: technological developments "  
2006 DFG METEOR proposal BIONIL (M70/2)  
2004-2005 DAAD-ICCTI Projektbezogener Personenaustausch mit Portugal (PPP) Acções Integradas Luso-Alemãs  
2002-2005 5th FP EU project "METROL – Methane fluxes in ocean margin sediments: microbiological and geochemical control "  
2002-2005 DFG/ODP project „Analysis of the distribution and diversity of methanotrophic microbial consortia at Hydrate Ridge (Cascadia Margin, Offshore Oregon; ODP Leg 204 in 2002)

2000-2003 BMBF project MUMM "Microbial turnover of methane above marine gas hydrate"  
1999-2000 BMBF project BIGSET II "Biogeochemical transport of matter and energy in the deep-sea"  
1999- 2000 DFG project "Pressure sensitivity of microbial processes in deep-sea sediments"

Previous Participation in research programs:

2000 NSF Life in Extreme Environments (Collaboration Univ Georgia)  
1999-2000 BMBF projects TECFLUX I+II "Tectonically induced material fluxes", NE Pacific (GEOMAR, Kiel)  
1997-1998 EU ENRICH program ADEPD "Atlantic data base for exchange processes at the deep-sea floor" (Baltic Sea Research Institute Warnemünde)  
1996-1998 BMBF project BIGSET I "Biogeochemical transport of matter and energy in the deep-sea" (Baltic Sea Research Institute Warnemünde)  
1993-1995 Project ARCTIC, Laptev Sea (AWI)  
1993 BMBF project TIEFMI, Eastern Mediterranean (Institute for Hydrobiology, Hamburg)

### National Collaborations

IfM-GEOMAR, Kiel (O. Pfannkuche, P. Linke, K. Wallmann)  
IOW, Warnemünde (G. Rehder)  
MARUM (G. Bohrmann, KU Hinrichs, W Bach)  
Deutsches Zentrum für Marine Biodiversitätsforschung (P. Martinez Arbizu)  
University Bielefeld (T Nattkemper)

### International Collaborations

IFREMER, France (K. Olu, N LeBris)  
CNRS UPMC, France (F Gaill)  
University of Tromso (J Mienert, P Wassmann)  
University of Georgia, USA (S. Joye)  
University of North Carolina, Chapel Hill, USA (C. Arnosti, A. Teske)  
Jamstec (F. Inagaki)  
MBL Woods Hole, US (Mitch Sogin)

### Current Graduate Students

Gerdhard Jenssen (PhD, MARMIC 2011-2014)  
Daphne Donis (Dr. Univ. Bremen 2010-2013)  
Emil Ruff (Dr. Univ Bremen 2010-2013)  
Felix Raulf (Dr., MARMIC 2009-2012)  
Petra Pop Ristova (Dr., MARMIC 2009-2012)  
Marianne Jacob (Dr., POLMAR 2009-2012)  
Judith Ufkes (PhD, GLOMAR, Uni Bremen 2008-2011)  
Christina Bienhold (Dr. Univ. Bremen 2007-2011)  
Daniel Santillano (PhD, MARMIC JUB 2006-2011)

### Previous Graduate Students

Angelique Gobet (PhD, MARMIC JUB 2006-2010)  
Sandra Schöttner (PhD, MARMIC JUB 2007-2010)  
Emil Ruff (M.S. Univ Stuttgart 2009-2010)  
Stefanie Grünke (Dr. Univ. Bremen 2006-2010)  
Janine Felden (PhD MARMIC JUB 2005-2009)  
Jan Fischer (Dr. Univ. Bremen 2005-2009)  
Petra Pop Ristova (Master, MARMIC 2008-2009)  
Marianne Jacob (Master, MARMIC 2008-2009)  
Judith Ufkes (Dipl, Uni Bremen 2008)  
Simone Boer (Dr. Univ. Bremen 2004-2008)  
Gunter Wegener (Dr. Univ. Bremen 2004-2008)  
Alexandra Meziti (Master, MARMIC IUB 2006-2007)  
Enoma Omoregie (PhD, MARMIC IUB 2004-2007)

Tina Lösekann (Dipl. Univ Bremen 2001, Dr. Univ Bremen 2002-2006)  
Helge Niemann (Dr. Univ Bremen 2002-2005)  
Janine Felden (Master MARMIC 2004-2005)  
Rita Dunker (Master MARMIC 2004-2005)  
Maya Shovitri (Master MARMIC 2004-2005)  
Tina Treude (Dr. Univ Bremen 2000-2003)  
Heiko Löbner (Dipl. Univ Bremen 2003)

#### Thesis Committee member (current)

Hannes Wagner (PhD JUB 2007-2011)  
Claudia Propp (Dr., GLOMAR ZMT Uni Bremen 2006-2011)  
Bevis Fedder (Dr., GLOMAR FB6 Uni Bremen 2008-2011)

#### Teaching Experience

Lecture and courses for Graduates in Microbial Oceanography and Geomicrobiology (IMPRS MARMIC)  
Lectures for Undergraduates in General Biology, Microbiology, Evolutionary Biology, and transdisciplinary „University Study Courses“ (team-taught with instructors from Humanities and Social Sciences) (International University Bremen/Jacobs University Bremen)  
Lectures for Graduates in Deep-Sea Ecology (University Hamburg) and Biogeochemistry (University Bremen)  
Undergraduate Courses in Biological Oceanography (University Rostock)  
Laboratory Courses for scholars, undergraduates, graduates and technicians in Microbiology, Biogeochemistry, Microbial ecology (University Rostock and MPI)  
Austral Summer Institute VII, Chile, ENERO 2007  
Participation in lectures „Evolution de la vie“ and „Microbiologie Generale“, Univ. Paris 6, 2004

#### Current Professional Memberships and Committees

- Advisory Board "C-DEBI" Center for Dark Biosphere (NSF Science and Technology Center, USC LA, USA)
- Scientific Steering Committee Deep Life Directorate of the Deep Carbon Observatory (Sloan Foundation, Carnegie USA)
- Advisory Board National History Museum Berlin
- Advisory Board Senckenberg Museum
- Advisory Board GeoBioCenter Munich (LMU)
- Advisory Board Institute for Polar Research IPEV (France)
- External Scientific Member of the Max Planck Society
- Science Council of Germany (Wissenschaftsrat)
- Advisory Board Diversitas D
- National Committee for Global Change Research
- Commission of the Senate for Oceanography (DFG, Germany)
- Head of the Scientific Committee of the Annette-Barthelt-Price for Marine Research
- Advisory Board of the Excellence Cluster "Future Ocean" University Kiel
- Science Committee NIOZ
- Head of the Advisory Board of the Institute for Baltic Sea Research
- Monaco Blue Initiative (Prince Albert II of Monaco Foundation)
- Membership American Society of Microbiology
- Membership American Society for Limnology and Oceanography
- Membership European Geosciences Union
- Membership American Geophysical Union
- Membership VAAM/FEMS
- Membership ISME

#### Past Professional Memberships and Committees

- Advisory board "International Census of Marine Microbial Life" ICOMM
- Steering Committee ChEss (Biogeography of Chemosynthetic Ecosystems), Census of Marine Life
- Scientific Council of CNRS Section „Planete et Universe“ (France)
- Scientific Committee of IFREMER (France)

- Scientific Committee DIVERSITAS International (UNESCO, ESSP)

## Professional Services

Editorial Boards of the ISME Journal (Nature Publishing Group), Applied and Environmental Microbiology, Geobiology, Aquatic Microbial Ecology, Marine Biology Research (new journal, previously SARSIA and OPHELIA), Environmental Microbiology

Reviewer for Journals Science, Nature, MEPS, Limnology and Oceanography, Deep Sea Research I + II, Marine Biology, Marine Geology, Progress in Oceanography, Journal of Sea Research, Organic Geochemistry, AEM, Microbial Ecology, Springer Verlag,

Reviewer for funding agencies: DFG, BMBF, ERC, NSF, NOAA, NWO, NERC, ANR, CNRS, SNSF, FWO

## Past Professional Services

Editorial Board of Biogeosciences

## Field Work (with participation of Antje Boetius)

<u>Ships</u>	<u>Area</u>	<u>in situ instruments</u>
2010 FS MERIAN 16/2	Barents Sea	AUV Sentry/ROV Genesis
2010 FS MERIAN 15/1	Black Sea	JAGO/MOVE
2009 FS MERIAN 13/3 and 4	Eastern Med.	ROV QUEST/AUV
2009 FS Polarstern ARK 24/2	Nordic margin	ROV QUEST/AUV
2008 FS METEOR 76/3b	Congo, Angola	ROV QUEST
2008 FS SONNE 169	Okinawa Trough	ROV QUEST
2007 RV Pourquoi Pas?	Eastern Med.	ROV VICTOR 6000
2007 RV METEOR 72/2	Black Sea	ROV QUEST/AUV Asterx
2006 RV METEOR 70/2	Eastern Med.	ROV QUEST/AUV Asterx
2006 RV Pourquoi pas?	Barents Sea	ROV VICTOR 6000
2006 FS METEOR 68/2	Golf v Mexico	ROV QUEST
2005 FS Alkor 267 (EXOCET)	North Sea	ROV Cherokee, MOVE
2005 RV Point Lobos	Catalina Basin	ROV Tiburon
2004 FS HEINCKE 208 (METROL)	North Sea	
2003 RV ATALANTE (Nautinil)	E Mediterranean	(submarine NAUTILE)
2003 RV POLARSTERN ARK XIX/3b	Barents Sea	(ROV VICTOR 6000, lander)
2002 RV HEINCKE 180 (METROL)	North Sea	(lander)
2002 RV HEINCKE 169 (METROL)	North Sea	(ROV AWI)
2001 RV ATALANTE (HMMV)	N-Atlantic	(ROV VICTOR 6000)
2001 RV SEWARD JOHNSON (LexEn)	Gulf of Mexico	(submarine JOHNSON SEALINK)
2000 FS SONNE 148/1 (TECFLUXII)	NE-Pacific	(ROV ROPOS, lander)
2000 FS POSEIDON 260-5 (BIGSET II)	NE-Atlantic	(lander)
2000 FS POSEIDON 260-3 (BIGSET II)	NE-Atlantic	(lander)
1999 FS SONNE 143/2 (TECFLUX I)	NE-Pacific	(lander)
1999 FS METEOR 46/2 (SFB 261)	S-Atlantic	(lander)
1998 FS METEOR 42/2 (BIGSET)	NE-Atlantic	(lander)
1998 FS SONNE 129 (BIGSET)	Arabian Sea	(lander)
1997 FS SONNE 118 (BIGSET)	Arabian Sea	(lander)
1996 FS METEOR 36/6 (BIGSET)	NE-Atlantic	(lander)
1995 FS METEOR 33/1 (pre-study BIGSET)	Indian Ocean	(lander)
1995 FS METEOR 31/3 (pre-study BIGSET)	Arabian Sea	
1993 FS METEOR 25/1 (TIEFMI)	E Mediterranean	
1993 FS POLARSTERN ARK IX/4	Laptev Sea	
1992 FS METEOR 21/6 (BIO-C-FLUX)	NE-Atlantic	(lander)
1992 FS METEOR 21/1 (BIO-C-FLUX)	NE-Atlantic	(lander)
1992 FS SONNE 77 (DISCOL)	S-Pacific	
1991 FS GAUSS (PRISMA)	North Sea	
1991 RV VICKERS/NADIR (HERO)	E Pacific	(submarine NAUTILE)
1990 RV NEW HORIZON (QUAGMIRE)	Equatorial Pazific	
1989 RV MOANA WAVE (BEPRA I)	Equatorial Pazific	
1989 FS METEOR 10/4 (BIO-C-FLUX)	NE-Atlantic	(lander)

## Honors/Awards/Stipends

2011 Elected Member of the Academy of Sciences and Literature Mainz  
2010 Member of the German Science Council  
2010 External Scientific Member of the Max Planck Society  
2009 Distinguished Professor of the Jacobs University  
2009 Elected Member of the National Academy Leopoldina (Section Geology)  
2009 Gottfried-Wilhelm-Leibniz Prize of the DFG  
2007 Teaching Award MARMIC  
2006 Teaching Award MARMIC  
2006 Medaille de la Societe d'Océanographie de France  
2005 Teaching Award MARMIC  
2004 Invited Professor University Pierre et Marie Curie (Paris 6)  
2000 FEMS Young Scientist Award for the participation in the 7<sup>th</sup> EMMS  
1999 FEMS Young Scientist Award for the participation in the conference "Enzymes in the Environment"  
1999 DFG Stipend for the participation in the 9<sup>th</sup> Goldschmidt Conference  
1998 DFG Stipend for the participation in the Gordon Research Conference on Polar Marine Science  
1997 EU Stipend for the participation in DIALOG II  
1991 IAESTE Stipend of the DAAD  
1986-1989 Stipend of the "Studienstiftung des Deutschen Volkes"

## Public Outreach (Exemplary Events 2005-2010)

2010 Television Magazines Quarks, Tigerentenclub, heute journal, Tagesschau  
2010 DFG Exkurs lecture "The Abyss – Deep Sea Research today"  
2009 Wissenschaftsrat-Symposium: Female scientists and explorers  
2009 Television Magazin "Planet Wissen" (SWR)  
2009 Television Magazin NANO (WDR)  
2008 Planet Earth Expedition BLOG M76/3b  
2008 International Year of Planet Earth, Tagung System Erde Mensch  
2007 Hanse Life Fair Public lecture  
2007 Television show "Faszination Wissen – Abenteuer Tiefsee" Bayern 3  
2006 Lecture on deep-water ecosystems for event of the German Parliament  
2006 ESOF Munich (2 lectures, Profmobil)  
2005 TV show NANO – Alkor 267/HERMES  
2005 Bremen City of Science "Wallfest" public lecture

## Exemplary Invited Talks and Session Chairs (2002-2010)

2010 ISME general meeting, Session "Life in the cold: ecological interactions and biogeochemical roles of polar microbial communities"  
2010 ASM 110<sup>th</sup> Gen. Meeting, Session "Microbes in a Changing World"  
2010 ASM 110<sup>th</sup> Gen. Meeting, Opening "Technology and Revolutions in Microbiology"  
2009 Invited keynote 11 SAME  
2009 ASM Academy of Microbiology Session chair "Rare Biosphere"  
2009 Goldschmidt Conference Theme coordinator and session chair "Extreme Environments"  
2008 Invited key note, Genome meeting, Department of Energy US  
2008 EGU Biogeochemistry Session Chair „Methane fluxes on Earth: budgets and biological controls“, Vienna, Austria  
2007 Goldschmidt session „Biogeochemistry of Extreme Environments“  
2007 EGU session „Methane fluxes on continental margins“  
2006 Vienna, ISME-11  
2006 Oxford, GRC on C1 metabolism, UK  
2006 Harvard, Microbial Science Symposium, Cambridge, USA  
2006 Amsterdam, ICOMM general meeting  
2006 ESF Magellan workshop on the Deep Biosphere, Warth, Switzerland  
2005 NSF DFG Workshop on Biodiversity, Washington  
2005 Extremophile Symposium, Invited Speaker, Toyko, Japan  
2004 Swiss Geoscience Conference, Invited Speaker, Lausanne, Switzerland  
2004 ESF EUROCORES/EUROMARGIN meeting, Invited speaker and session chair "Fluid flow", Barcelona Spain

2004 ISME "Blue Planet" Session, Invited Speaker, Cancun, Mexico  
2004 EGU Biogeochemistry Session Chair „Methane fluxes on Earth: budgets and biological controls“, Nice, France  
2003 OMARC Conference, Invited Speaker of Special Session „Continental Margin Ecosystems“, Paris, France  
2003 Census of Marine Life – RIDGE workshop on „Biogeography of Chemosynthetic Ecosystems“, Southampton, UK  
2003 EGS/AGU/EUG Biogeochemistry Session Chair „Methane fluxes on Earth: budgets and biological controls“, Nice, France  
2003 ASLO Organisatory Committee "Extreme Environments on Earth and Beyond" and Session Chair „Microbiology and Biogeochemistry of Cold Seeps", Salt Lake City, USA  
2003 ASLO Invited Speaker of Special Session "Symbiosis and Syntrophy in Extreme Environments", Salt Lake City, USA  
2002 ASM Invited Speaker of the President's Forum, Salt Lake City, USA  
2002 Gordon Research Conference on Molecular Basis of Microbial One-Carbon Metabolism, Invited Speaker of Session „Novel reactions in the environment“, Connecticut, USA  
2002 Annual VM Goldschmidt Conference, Session Chair of "Molecular tools for the identification of important geomicrobial organisms", Davos, Switzerland

### Web of Science Citation Report

Web of Science publication index Jan 2011: 114 items; 3241 citations since 1992, H index 32, average citation per item 29