

Sandra Schuster

Meteorologist, Climatologist, Atmospheric Physicist

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(email communication preferred)

CURRICULUM VITAE



Education:

Macquarie University Sydney, Australia, Prof. Russell Blong

PhD candidate, Risk Frontiers - Natural Hazards Research Centre, April 2002 – April 2006;
PhD thesis on hailstorms in Sydney using observational, weather radar, emergency management and insurance data (submitted for examination)

University of Kiel, Germany, Prof. Peter Lemke

Degree in Meteorology (Atmospheric Physics) at the Institute of Marine Research (IfM);
graduated 'sehr gut' (very good) in March 1999, thesis on sea ice properties in a large-scale simulation for the Weddell Sea

Awards and Scholarships:

- Australian government International Postgraduate Research Scholarship - highly competitive
- Macquarie University International Postgraduate Research Award
- Risk Frontiers stipend
- Prize for best student presentation at the International Conference on Storms, Brisbane, July 2004
- Macquarie University Postgraduate Research Fund
- American Meteorological Society student travel grant

Professional experience:

April 2002 - present: **Risk Frontiers - Natural Hazards Research Centre**
PhD candidate and project scientist; Lecturer;
Responsibilities include project management as well as presentation and publication of scientific peer reviewed papers and more general publications. Tasks involved using excel, access, MapInfo and other software as well as collaboration with external businesses, institutes and agencies. Familiarity with the workings of HailAUS and basic understanding of Ausplume. Designing and presenting a module of lectures on radar and applications for a 3rd year applied climatology programme.

March 2004 - February 2006: **Insurance Australia Group (IAG)**
Risk and Research Analyst (part time); Responsibilities include the assessment and research of weather related risk to the business with focus on hail and other weather related events. Tasks involved using SAS, excel and MapInfo and communication of results to a broad cross-section of people with different backgrounds.

August 2001 - March 2002: **Alfred Wegener Institute for Polar and Marine Research (AWI), Bremerhaven, Germany**
Scientist North Pole expedition ARK XVII/2 with research vessel 'Polarstern';
Sea ice work investigating the thinning in the Arctic and observational sea ice tasks, post cruise analysis of data gained during expedition.

July 1999 - August 2001: **British Antarctic Survey, Cambridge, UK (affiliated with University of Cambridge)**
Scientist (Sea Ice Modeller, climate research);
Implementation of a sea ice model within a Coupled Atmosphere-Ocean Global Circulation Model and Earth System Modelling, European Union project.

April - June 1999: **AWI, Bremerhaven, Germany**
Scientist at the Department of Glaciology;
Analysis of Arctic and Antarctic Ice cores for climate reconstructions.

April 1995 - March 1999: **Institute of Marine Research (IfM), Kiel, Germany
Institute for Nuclear Physics, University of Kiel**

- Numerical calculations for satellite remote sensing
- Supervision of student practice cruises Meteorology with research vessel 'Alkor'
- Tutorials in meteorology about physics, synoptic and physical climatology
- Supervision of advanced student training in physics of detectors

August - September 1998: **AWI, Bremerhaven, Germany**
Arctic expedition ARK XIV/2 with research vessel 'Polarstern'; Investigation of nutrients, oxygen, salinity and CTD watch in the Fram Strait as part of the 'World Climate Research Program'.

August – September 1996: **German Weather Services Potsdam and Braunschweig, AWI Bremerhaven, Germany**
Internships with miscellaneous tasks.

Interests:

- Natural Hazards and their impacts and applications
- Climate Change (in general as well as with respect to Natural Hazards) and its impacts on businesses and communities
- Emergency management, communication
- Risk Modelling
- Sustainability
- Polar Regions, Oceanography

Special knowledge and skills:

- **IT Experience**
 - Operating Systems Windows XP (4y), UNIX (6y), Cray T3E (2y), Linux (3y), DOS, VMS, Apple/Mac
 - Programming Languages Fortran 90 (6y), HTML (1y), PASCAL, C
 - Application Programs MS Office (excel, word, access, power point) (5+y), Geographical Information Systems GIS (MapInfo, 3y), SAS, IDL (4y), Latex (3y)
- **Languages**
 - German (native)
 - English (Cambridge Certificate of Proficiency, IELTS)
- **Others**
 - Licence for radiation protection, driver's licence
 - Good presentation skills; talks and poster presentations at international conferences in the UK, Germany, USA (Alaska, Massachusetts), France, Australia
 - Business high school

Recent Presentations:

- Oral presentation at the Bureau of Meteorology Research Centre and CSIRO, Melbourne, March 2006
- Oral presentation at Insurance Australia Group's CEO forum, Sydney, November 2005
- Invited to give seminar to Senior Management at Insurance Australia Group, Sydney, October 2005
- Invited to give seminar at the Australian Meteorological and Oceanographic Society, Sydney, September 2005
- Oral presentation at the 5th Annual Meeting of the European Meteorological Society, Utrecht, Netherlands, September 2005
- Oral presentation at the Planning for Natural Hazards Symposium, Wollongong, February 2005
- Oral presentation at the 22nd Conference on Severe Local Storms, Hyannis, Massachusetts, USA, October 2004
- Invited to give seminar at the Bureau of Meteorology, Regional Forecast Centre, Sydney, September 2004
- Oral presentation at the International Conference on Storms, Brisbane, July 2004
- Invited to give seminar at Insurance Broker Guy Carpenter, Sydney, February 2004
- Poster presentation at the Sixth International Symposium on Hydrological Applications of Weather Radar, Melbourne, February 2004
- Invited to give seminar at the NSW State Emergency Service, Wollongong, January 2004
- Oral presentation at Risk Frontiers Insurance Industry Seminar day, Macquarie Graduate School of Management, Sydney, October 2003
- Invited to participate in Management Workshop, Boston Consulting Group, Düsseldorf, Germany, December 2001

Recent Publications:

Schuster, S. S., Blong, R. J. and Speer, M. S., 2005. A Hail Climatology of the Greater Sydney area and New South Wales, Australia. *International Journal of Climatology*, 25: 1633-1650.

Schuster, S. S., Blong, R. J. and Leigh, R., 2005. Characteristics of the 14th April 1999 Sydney hailstorm based on ground observations, weather radar, insurance data and emergency calls. *Natural Hazards and Earth System Sciences*, 5, 613-620.

Schuster, S. S., Blong, R. J. and. McAneney, K. J., 2006. Relationship between radar derived hail kinetic energy and damage to insured buildings for severe hailstorms in Eastern Australia. *Atmospheric Research*, 81, 215-235.

Schuster, S. S., Blong, R. J., Speer, M. S. and Leigh, R., submitted. Hail swath, radar reflectivity and damage characteristics of severe storms in the Sydney metropolitan area, Australia. Special issue of *Meteorology and Atmospheric Physics*.

Several Briefing Notes (Risk Frontiers), conference papers and abstracts

Professional Affiliations:

- Committee member Australian Meteorological and Oceanographic Society (AMOS) since 2004
- German Meteorological Society (DMG)
- American Meteorological Society (AMS)
- Reviewer for the *International Journal of Climatology*

Special Characteristics and Activities:

- highly motivated and enthusiastic
- creative
- team player
- leadership skills
- customer focused
- organisational skills
- good decision-maker

I like to tap dance and used to teach up to 30 people at university and organise performances. Playing saxophone is a favourite activity of mine and I used to play with the University Big Band. I was also strongly involved in different music groups since childhood (playing drums and percussion). I also enjoy sailing, cycling, travelling and recently became passionate about photography.

References:

Academic: Prof. Russell Blong (PhD supervisor): 0410 336 700, rblong@els.mq.edu.au

Academic: Dr. Milton Speer (Associate PhD supervisor):
mss@lighthill.maths.unsw.edu.au

Personal: Dr. Ann Goeth: 0424 279 508, ann.goeth@bio.mq.edu.au

