

PAOLO GABRIELLI (PI)

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DEGREES

M.S., Environmental Sciences, University Ca' Foscari of Venice, Italy, 1998

Ph.D., Ocean Atmosphere Hydrology, University J. Fourier of Grenoble, France;
Environmental Sciences, University Ca' Foscari of Venice, Italy, 2004

POSITIONS

2007-2009: Research Scientist, School of Earth Sciences and Byrd Polar Research Center, The Ohio State University

2004-2007: Post-doctoral fellow: Paleoclimatic reconstructions from trace elements determined from polar ice cores, University Ca' Foscari of Venice, 2004 -2007

2000-2001: Safety Health Environment and Quality Assistant at the Cabot Plastics and co-ordinator of the audit plant team in Grigno (Trento Province, Italy)

AWARDS

Francesco Fabbri Prize, Consortium BIM Piave Treviso, Treviso, Italy, October 1999

Paolo Valentini Prize, Italian Association Snow and Avalanches, Aosta, Italy, June 2003

Felice Ippolito Prize, Italian Antarctic Program, Roma, Italy, October 2006

RESEARCH PUBLICATIONS AND ACTIVITIES

Peer Reviewed Papers: (29 peer-reviewed papers)

Research Grants: (1 grant awarded)

Field Programs (7 programs: 2 to Antarctica; 2 to Peru; 3 to Alps)

Five most relevant publications:

Gabrielli P., A. Wegner, J.R. Petit, B. Delmonte, P. De Dekker, V. Gaspari, H. Fisher, U. Ruth, M. Kriews, C.F. Boutron, P. Cescon, C. Barbante, A major glacial-interglacial change in aeolian dust composition as inferred from Rare Earth Elements in Antarctic ice, *Quat. Sci. Rev.* 2009, in press

Gabrielli P., F. Planchon, C. Barbante, C.F. Boutron, J.R. Petit, S. Bulat, S. Hong, G. Cozzi, P. Cescon, 2009 Ultra-low Rare Earth Elements content in accreted ice from sub-glacial Lake Vostok, Antarctica, *Geochim. Cosmochim. Acta*, 73, 20, 5959-5974.

Gabrielli, P., C. Barbante, J.M.C. Plane, C.F. Boutron, J.L. Jaffrezo, T.A. Mather, B. Stenni, V. Gaspari, G. Cozzi, C. Ferrari, P. Cescon, 2008 Siderophile metal fallout to Greenland from the 1991 winter eruption of Hekla (Iceland) and during the global atmospheric perturbation of Pinatubo, *Chemical Geology*, 255, 78 - 86.

Gabrielli, P., C. Barbante, C. Turetta, A. Marteel, C.F. Boutron, G. Cozzi, W. Cairns, C. Ferrari, and P. Cescon, 2006. Direct Determination of Rare Earth Elements at the Sub Picogram per Gram Level in Antarctic Ice by ICP-SFMS Using a Desolvation System, *Anal. Chem.* 78, 1883-1889.

Gabrielli, P., C. Barbante, J.M.C. Plane, A. Varga, S. Hong, G. Cozzi, V. Gaspari, F. Planchon, W. Cairns, C. Ferrari, P. Crutzen, P. Cescon, and C.F. Boutron, 2004. Meteoric smoke fallout over the Holocene epoch revealed by iridium and platinum in Greenland ice, *Nature* 432, 1011-1014.

Five other publications:

- Jitaru P., P. Gabrielli, A. Marteel, J.M.C. Plane, F. Planchon, P.A. Gauchard, C. Ferrari, C.F. Boutron, F.C. Adams, S. Hong, P. Cescon, C. Barbante, 2009 Atmospheric depletion of mercury over Antarctica during glacial periods, *Nature Geoscience*, 2, 505-508.
- Gabrielli P., G. Cozzi, s. Torcini, P. Cescon, C. Barbante, 2008. Trace elements in winter snow of the Dolomites (Italy): a statistical study of natural and anthropogenic contributions, *Chemosphere*, 72, 1504 - 1509.
- Gabrielli, P., J.M.C. Plane, C.F. Boutron, S. Hong, G. Cozzi, P. Cescon, C. Ferrari, P. Crutzen, J.R. Petit, V.Y. Lipenkov, C. Barbante, 2006. A climatic control on the accretion of meteoric and super-chondritic iridium-platinum to the Antarctic ice cap, *Earth Planet. Sci. Lett.*, 250, 459-469.
- Gabrielli, P., C. Barbante, C.F. Boutron, G. Cozzi, V. Gaspari, F. Planchon, C. Ferrari, P. and Cescon, 2005. Variations in atmospheric trace elements in Dome C (East Antarctica) ice over the last two climatic cycles, *Atmos. Environ.* 39, 6420-6429.
- Gabrielli, P. F. Planchon, S. Hong, K. Lee, S.D. Hur, C. Barbante, C. Ferrari, J.R. Petit, V.Y. Lipenkov, P. Cescon, and C.F. Boutron, 2005. Trace elements in Vostok Antarctic ice during the last four climatic cycles, *Earth Planet. Sci. Lett.*, 234/1-2, 249-259.

I have a permanent position as a Research Scientist at The Ohio State University. This position, which is funded through an Academic Enrichment award from the Provost to the School of Earth Sciences, allows me to serve as a Principal Investigator on proposals and to develop a research program for ice core trace element chemistry within the Ice Core Paleoclimate Group. I was funded by the MRI NSF program and by the University to acquire and install a new mass spectrometer (ICP SFMS) for trace element analysis. This will greatly enhance the capability of the paleoclimate research group to extract new paleoclimatic and paleoenvironmental information from the BPRC ice core archive. In the recent past I have developed a new method for the determination of Rare Earth Elements in polar ice using ICP-SFMS that lowers the concentrations of trace elements directly measured in polar ice by two orders of magnitudes. Application of my new methodology for the determination of Ir and Pt by ICP-SFMS in ice revealed that atmospheric fallout contains new types of nanometric particles of extraterrestrial origin. I led the drilling operations of two shallow cores in Talos Dome (2005, Antarctica) and an extensive reconnaissance in the Tyrolean Alps (2005, Italy) where I'm coordinating an international effort to drill and study Mt. Ortles. Since I am established at OSU I have collaborated in teaching the Paleoclimate class 750 of Prof. Lonnie Thompson, I have given 3 lectures by videoconference with Italy and I have presented a keynote lecture at the international conference, "Remediation of chlorinated and recalcitrant compounds" held in 2008 in Monterey, California. Until now I have given 23 slide presentations of my glaciological activity for the general public.

Recent Collaborators: Carlo Barbante (University of Venice, Italy), Claude Boutron (LGGE, CNRS, Grenoble, France), Sungmin Hong (Korean Polar Institute, Seoul, Korea), Jean Robert Petit (LGGE, CNRS, Grenoble France), John Plane (University of Leeds, Leeds, UK), Jean Luc Jaffrezo (LGGE, CNRS, Grenoble, France), Sergey Bulat (Petersburg Nuclear Physics Institute, Russia), Tamsin Mather (University of Oxford, UK), Hubertus Fischer (University of Bern), Barbara Delmonte (University of Milano), Patrick De Deckker (University of Canberra), Luca Carturan (University of Padua), Karl Krainer (University of Innsbruck).