

PAOLO GABRIELLI (Brief Vita)

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Education:

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

Appointments:

2007: 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)

Five Most Relevant Publications: (Total peer-reviewed publications: 18)

- 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., 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. 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.
- 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.
- Gabrielli, P., A. Varga, C. Barbante, C.F. Boutron, G. Cozzi, V. Gaspari, F. Planchon, W. Cairns, S. Hong, C. Ferrari, and G. Capodaglio, 2004. Determination of Ir and Pt down to the sub-femtogram per gram level in polar ice by ICP-SFMS using preconcentration and a desolvation system, *J. Anal. At. Spectrom.* 19, 831-837.

Five other publications:

- Siggaard-Andersen, M.L., P. Gabrielli, J.P. Steffensen, T. Stromfeldt, C. Barbante, C.F. Boutron, H. Fisher, and H. Miller, 2007. Soluble and insoluble chemistry of lithium in the EPICA Dome C ice core, *Earth Planet. Sci. Lett.*, 258, 32-43.
- 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.

- Vallelonga, P., P. Gabrielli, K. Rosman, C. Barbante, C.F. Boutron, 2005. A 220 ky record of Pb isotopes at Dome C Antarctica from analyses of the EPICA ice core, *Geophys. Res. Lett.* 32, doi:10.1029/2004GL021449.
- Planchon, F., P. Gabrielli, A. Dommergue, P.A. Gauchard, C. Barbante, C.F. Boutron, W. Cairns, G. Capodaglio, P. Cescon, G. Cozzi, C. Ferrari, S.A. Nagorsky, A. Varga, and E.W. Wolff, 2004. Direct determination of mercury at the sub-picogram per gram levels in polar snow and ice by ICP-SFMS, *J. Anal. At. Spectrom.* 19, 823-830.
- Hong, S., C. Barbante, C.F. Boutron, P. Gabrielli, V. Gaspari, P. Cescon, L.G. Thompson, C. Ferrari, B. Francou, and M. Bourgoïn, 2004. Atmospheric heavy metals in tropical South America during the past 22,000 years recorded in a high altitude ice core from Sajama, Bolivia, *Jour. Env. Monitor.* 6, 222-226.

Synergistic activities:

I have acquired nearly 10 years of experience in the trace element analysis of ice as a graduate student and post-doc in the two most skilled groups in this field (University of Venice and Grenoble). During this time I developed a new method for the determination of Rare Earth Elements in polar ice using ICP-SFMS. This represents a major advance in the field as it 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. This is changing the current view of how and which type of cosmic material is accreted to the Earth. I was also involved in the European Project for Ice Coring in Antarctica. I participated in two field seasons in Antarctica (2003, 2005) and in a drilling operation in the Swiss-Italian Alps (2003). I moved from Italy to the U.S. in September to take 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 of the Byrd Polar Research Center. Since coming to OSU I have given a lecture by videoconference to teachers of high schools from my region in Italy and I'm involved in development of a new initiative called "An international virtual institute for the study of temperate glaciers around the globe" that is going to provide an extensive outreach of our research activity. In addition, I have given a number of lectures in Analytical Chemistry at the University of Venice and 12 slide presentations of my glaciological activity in Antarctica for the general public. I have presented highlights of my scientific research for retirement groups (2), mountaineering associations (3) and a church group. In 1995 I received the title of Instructor of Mountaineering for young people from the Italian Alpine Club (CAI-SAT) and for the last 10 years I have taught young people hiking and climbing.

Recent Collaborators: 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), Kevin Rosman (Curtin Institute of Technology, Perth, Australia)

Academic Advisors: Claude Boutron (LGGE, CNRS, Grenoble, France) and Carlo Barbante (University of Venice, Italy)