Francesco Iacoviello

Address: Department of Physical, Earth and Environmental Sciences
University of Siena
Via Laterino 8, 53100 - Siena (Italy)
Phone: +39 0577 233830
Fax: +39 0577 233938
Mobile: +39 3479466779
Skype: iacoviello82
E-mail: iacoviello.francesco@gmail.com
iacoviello3@unisi.it

PERSONAL PROFILE

Dynamic and enthusiastic geologist, recently gained a PhD in Earth Sciences with focus on mineralogy of drill core sediments from Antarctica and on paleoclimatic reconstruction. My expertise includes XRD, SEM and FESEM techniques. I am a very curious person and that allowed me to explore various fields of earth sciences research, including also karstic cave studies and alteration processes of volcanic deposits. I have over 5 years experience performing environmental geochemistry studies with focus on distribution and behavior of heavy elements in water streams as well as trace elements in sediments.

EDUCATIONAL BACKGROUND

2008 - 2012	PhD. in Earth Sciences, University of Siena, Italy.
2005 - 2007	M.S. in Geological Sciences, with a major in geochemistry, University of Siena, Italy.
2001 - 2005	B.S. in Geological Sciences, with a major in geochemistry, University of Siena, Italy.

PROFESSIONAL ACTIVITIES

Aug. 2006 – Dec. 2007	Laboratory and Field work assistant at Department of Environmental Sciences "G.Sarfatti" University of Siena (Italy).
Jul. 2005 – Sept. 2005	Photointerpretation study and geographical data management with Geographical Information System (GIS). Internship goal: participation in "KYOTO-INV Phase II project"- land use database implementation; collaboration in data processing relative to Tuscany, Calabria, Abruzzo & Molise Regions (Italy), Geographike S.r.l.

RESEARCH INTERESTS

Mineralogy, clay minerals analysis, heavy minerals analysis, geochemistry, quantitative mineralogy, alteration processes, volcanic materials, climate change, paleoenvironmental reconstructions, ice dynamics, Antarctica, laboratory techniques.

RESEARCH EXPERIENCE

Ph.D. Thesis: "Mineralogy of sediments from AND-2A drill core (McMurdo Sound, Antarctica)". The research project dealt with a combined clay-heavy mineral analysis of marine sediments recovered in 2007 in the McMurdo Sound region (Ross Sea, Antarctica) during the ANtarctic DRILLing Program (ANDRILL) - Southern McMurdo Sound Project. The main objectives were to 1) study how clay minerals reflect paleoclimatic conditions, in particular the Mid-Miocene Climatic Optimum, 2) investigate how heavy mineral assemblages reflect different source rocks and hence different provenance areas and 3) study the ice sheet development in East-Antarctica in the last 20 Ma.

M.S. Thesis: "Geochemical features of soils and sediments of Siena Basin (Central Italy): distribution, mobility and behavior of main and trace elements".
The thesis project led to the characterization of sediments and soils of Siena Basin in respect to: 1) mineralogical characterization, chemico-physical parameters such as pH, $CaCO_3$ content, TOC (Total Organic Carbon), CEC (Cation Exchange Capacity), grain size analysis; 2) total content of major, minor and some trace elements; 3) gain and loss elements in soil samples; 4) chemical fractionation of trace elements using sequential extractions; 5) trace elements mobility in the system of study.

B.S. Thesis: "Distribution and behavior of heavy elements in the water streams of the Fenice Capanne (Massa Marittima, Grosseto, Italy) mining area".
This geochemical research project dealt with the study of distribution of heavy elements in the water streams surrounding an abandoned mining area. The survey pointed out that the high concentration of arsenic present in the water immediately after the mine entrance lower around one kilometer downstream due to the buffer-effect exerted by the carbonate rocks that constitute the water stream bedrock.

OTHER EXPERIENCES

22 – 26 October 2012	Participation in MSM20/3 AMADEUS First Post - Cruise Workshop & Sampling Party at MARUM-Centre for Marine Environmental Science of University of Bremen (Germany).
9 – 24 June 2012	Visiting student at Department of Earth Sciences of Montclair State University (New Jersey, USA).

21– 23 December 2011	Visiting student at Department of Earth Sciences of University of Utrecht (The Netherlands).
11 – 12 October 2011	Participation in Doctoral School "Application of Raman Spectroscopy to Earth Sciences", Department of Earth Sciences, University of Siena (Italy).
10 – 16 July 2011	11th International Symposium on Antarctic Earth Sciences, Edinburgh, Scotland (UK).
8 – 12 June 2010	International Polar Year Oslo Science Conference 2010, Oslo (Norway).
6 – 11 April 2010	ANDRILL – Southern McMurdo Sound (SMS) Project - Science Integration Workshop at Ettore Majorana Foundation and Centre For Scientific Culture, Erice (Tp), Sicily (Italy).
13 – 30 November 2009	Textural investigations on Clay minerals has been performed by Field Emission Scanning Electron Microscopy (FESEM) at Centro de Instrumentacion Cientifica (CIC) of the University of Granada, (Spain).
October 2009	Geological and Geophysical Investigations from the Transantarctic Mountains to Dome C (DIPTERIS, University of Genova, Italy).
9 – 11 September 2009	GEOITALIA 2009, VII Forum italiano di Scienze della Terra, Rimini(Italy).
12 – 23 January 2009	Intensive Erasmus Course: MATERIALS AND PATRIMONY: STONE, GLASS, CERAMICS AND CONCRETE DURABILITY AND CONSERVATION, at Paris Est University Marne la Vallèe, Paris (France).
7 – 9 January 2009	Geomorphology course: "Tectonic geomorphology and landscape evolution" held by Prof. Frank J. Pazzaglia (Department of Earth and Environmental Sciences, Leigh University Bethlem, Pa) at Department of Geological Sciences – University of Roma Tre (Roma, Italy).

SKILLS

Languages:	Italian (native), English (fluent), Spanish (basic).
Social skills:	Good attitude; Respect for others' feelings and viewpoints; Ability to establish and maintain good working relations with people of different national and cultural backgrounds;
Organizational skills:	Good ability to meet deadlines; Good time management skills; Problem solving attitude.

Technical skills:	Good command of Scanning Electron Microscope (SEM) and Field Emission Scanning Electron Microscope (FESEM); Good knowledge of X-ray diffraction technique (XRD); Knowledge of X-ray Fluorescence technique (XRF); Good knowledge of clay mineral analysis; Good knowledge of heavy mineral analysis; Good knowledge of chemical index of alteration (CIA). Knowledge of digital Ionalyzer pH measurement, hydrometer grain size analysis, De Astis calcimeter method, Cation Exchange Capacity (CEC) analysis. Thin sections preparation.
Computer skills:	Good command of Microsoft Office™ tools (Word™, Excel™ and PowerPoint™); Good command of graphic design applications (Adobe Illustrator™, Adobe PhotoShop™, Macromedia FreeHand). Microsoft Office™ tools (Word™, Excel™ and PowerPoint™); Mac Diff XRD software (free on-line) for quantitative analysis.
Other skills:	Avid runner; speleology; trekking; wildlife photography.

AWARDS/GRANTS

Stipends award of Association of Polar Early Career Scientists (APECS) to assist at 11th Symposium of Antarctic Earth Sciences in Edinburgh (10 - 16 July 2011), € 300.

MEMBERSHIP ORGANIZATIONS

2011 -	Member, Speleologic association "SpeleoSiena"
2011 -	Member, Mineralogical society of Great Britain and Ireland
2008 -	Member, ANDRILL Southern McMurdo Sound Project Off-ice Team (Clay mineral analysis)

PUBLICATIONS

Refereed Publication

F. Iacoviello, G. Giorgetti, I. Turbanti Memmi & S. Passchier (2013). Early Miocene Antarctic glacial history: new insights from heavy mineral analysis from ANDRILL AND-2A drill core sediments. *Submitted to Geosphere.*

F. Iacoviello and I. Martini (2012). Clay minerals in cave sediments and terra rossa soils in the Montagnola Senese karst Massif (Italy). *Submitted to Geological Quarterly*.

A. Di Roberto, G. Giorgetti, **F. Iacoviello** and M. Pompilio (2013). Alteration of volcanic deposits in the ANDRILL AND-1B core: influence of paleodeposition, eruptive style and magmatic compositions. *Geosphere*, **9**: 275-286. DOI: 10.1130/GES00812.1.

F. Iacoviello and I. Martini (2012). Provenance and geological significance of red mud and other clastic sediments of the Mugnano cave (Montagnola Senese, Italy). *International Journal of Speleology*, **41** (2): 319-330. DOI: 10.5038/1827-806X.41.2.17.

F. Iacoviello, G. Giorgetti, F. Nieto & I. Turbanti Memmi (2012). *Clay Minerals*, **47** (4): 481-498. Evolution with depth from detrital to authigenic smectites in sediments from AND-2A drill core (McMurdo Sound, Antarctica); DOI: http://dx.doi.org/10.1180/claymin.2012.047.4.07.

Non - Refereed Publication

F. Iacoviello, (2011). I minerali argillosi quali indicatori per ricostruire il clima del passato, *Etrurianatura*. ISBN/EAN: 9788836622504.

Abstracts

I. Martini & **F. Iacoviello** (2012). Autochthonous VS allocthonous origin of red muds in caves: a combined mineralogical and sedimentological investigation of the clastic sediments of the Mugnano cave (Montagnola Senese, Northern Apennines, Italy). Abstract, 29th IAS Meeting of Sedimentology, Schladming, Austria, 10 - 13 September 2012.

F. Iacoviello, G. Giorgetti, I. Memmi, F. Talarico (2011). The heavy mineral record in the Lower Miocene sediments of the AND-2A drill core, McMurdo Sound, Antarctica. Abstract, 11th International Symposium on Antarctic Earth Sciences, Edinburgh, Scotland, 10-16 July 2011; http://www.isaes2011.org.uk/abstracts_v4_20_07_2011.pdf

F. Talarico, D. Pace, **F. Iacoviello**, S. Sandroni (2011). Basement clasts in ANDRILL AND-2A core: a provenance tool to unravel the Miocene glacial history in the Ross Embayment (western Ross Sea, Antarctica). Abstract, 11th International Symposium on Antarctic Earth Sciences, Edinburgh, Scotland, 10-16 July 2011; http://www.isaes2011.org.uk/abstracts_v4_20_07_2011.pdf

A. Di Roberto, **F. Iacoviello**, M. Pompilio, G. Giorgetti (2011). Alteration of volcanic glass observed in the ANDRILL AND-1B core: description, paragenesis and implication for palaeoenvironmental reconstruction. Abstract, 11th International Symposium on Antarctic Earth Sciences, Edinburgh, Scotland, 10 – 16 July 2011; http://www.isaes2011.org.uk/abstracts_v4_20_07_2011.pdf

F. Iacoviello, G. Giorgetti, I. Memmi Turbanti, F. Talarico, F. Nieto (2010) . Authigenic and detrital smectites in Cenozoic marine sediments from McMurdo continental margin (Antarctica). Abstract, International Polar Year Oslo Science Conference, Norway, 8-12 June 2010;

F. Iacoviello, G. Giorgetti, I. Turbanti Memmi, and F. Nieto (2010). Authigenic and detrital smectites from AND-2A drill core, ANDRILL Southern McMurdo Sound Project, Antarctica. Abstract, ANDRILL Southern McMurdo Sound Project Science Integration Workshop, Erice, Sicily (Italy), 6-11 April 2010;

F. Iacoviello, G. Giorgetti, I. Turbanti Memmi, F. Talarico (2009). Clay mineral assemblages of sediments from McMurdo continental margin (Antarctica), Abstract, GEOITALIA 2009, VII Forum italiano di Scienze della Terra, Rimini (Italy), 9-11 September 2009. Pp: 306.