

CV - Barbara Cavalazzi

Assistant Professor

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Adjunct Professor

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I'm currently Assistant Professor at the Dipartimento di Scienze Biologiche, Geologiche e Ambientali (BiGeA), UNIBO, Italy. In 2005, I obtained my Ph. D. in Palaeontology from the University of Modena and Reggio Emilia, Italy, and continued my learning and research as post-doc and associate researcher at UNIBO, at the University of Western Australia, at the Portland State University (USA), at the Centre de Biophysique Moléculaire-CNRS (France), and at the University of Johannesburg (South Africa) where I'm appointed since 2012 as a 4-year Visiting Professor. Over these years, I have conducted research in many different areas of geobiology and astrobiology such as microbial palaeontology and biosignatures/biomarkers, geomicrobiology and biosedimentology, and to date, I am an experienced academic research with proven skills in these research fields. As my CV indicates, despite my wide experience in lab. activities (from samples processing to high resolution analyses), as geologist and geobiologist I had chance to be involved and organize several field trips/works in Africa, North, East and South America, Australia, Europe. To date I'm Editorial Board Member of the journal *Astrobiology* and the *Journal of Astrobiology & Outreach*, and SM of the ORIGINS, TD1308 COST Action TD1308.

Current research

The principle focuses of my research projects are 1) to understand the origin of life and evidence of microbial life and related habitat in early Earth and extreme environment, and their implications for life on Mars; 2) to understand how the microorganisms especially prokaryotes living in surface and sub-surface extreme environments, can be preserved in the rock record, and how they impact on the geochemistry and mineralogy of their environment. My research integrates field geology and geomicrobiology with advanced analytical techniques and lies at the interface between geology, biology and geochemistry.

I'm interested in modern and fossil hydrocarbon seeps and hydrothermal vents, and saline environment, because their high preservation potential and because these settings have been implicated as the crucibles for life's origin, and as locales for methane release to the atmosphere from hydrate destabilization during past climate change. All projects I'm involved in (as PI and collaborator) include field geology work as well as standard and innovative analytical techniques.

To date, the investigate sites I'm interested in and how I have organised several field mapping and work, include:

- microbially-induced carbonates and mineral signature related to Palaeozoic hydrocarbon release in Africa (Morocco, South Africa);
- microbially-related structures forming in active and sub-fossil hydrothermal spring from Yellowstone National Park (USA), El Tatio (Chile) and Dallol-Afar (Ethiopia) geothermal area;
- Archaeal cherts deposit of the Barberton greenstone belt in South Africa as they provide important clues to geological parameters of the early Earth;
- Silicified carbonate stromatolites in Brazil (Parana Basin).

EDUCATION

- 2005 PhD in palaeontology, Università di Modena e Reggio Emilia, ITALY.
 2001 Post-*Laurea* Degree in Environmental Geology, SudGest a r.l., Bari, ITALY.
 1999 *Laurea* in Geology (110/110 full marks), Università di Chieti, ITALY.

ACADEMIC POSITIONS

- 2014- Research Professor at the International Research School of Planetary Sciences (IRSPS), ITALY.
 2012- Assistant professor, BiGeA, UNIBO, ITALY.
 2012-16 Adjunct Professor at the Department of Geology, University of Johannesburg, SOUTH AFRICA.
 2011-12 Post-doctoral Research Fellow, Department of Geology, University of Johannesburg, SOUTH AFRICA.
 2009-10 Researcher, Centre de Biophysique Moléculaire, CNRS-Orléans, FRANCE.
 2008 Associate Researcher, Department of Geology, Portland State University, USA.
 2007-08 Research fellow, Dipartimento di Scienze della Terra e Geologico-Ambientali, UNIBO, ITALY.
 2006 Visiting Post-doctoral Research Fellow, Geology Department, University of Western Australia, Perth, AUSTRALIA.
 2005-07 Post-doctoral Research Fellow, Dipartimento di Scienze della Terra e Geologico-Ambientali, UNIBO, ITALY.

ACADEMIC QUALIFICATIONS/CERTIFICATES

- 2011- Qualified as Researcher, area GEO/01 Paleontologia e Paleoecologia, ITALY.
 2010-13 Qualified as Maître de conférences (licence N. 10236204490), session T36, France
 2002 Vocational Training Certificate in Expert in environmental audit (*translation*), Regione Puglia/Settore Formazione Professionale, Bari, ITALY.
 2000 Licensed as Professional Geologist, Chieti, ITALY.

PROFESSIONAL CARRIER

- 2006 April 2006: Scientific consultant. International Research School of Planetary Sciences (IRSPS), Pescara, ITALY.
 2005 Mars 2005: Technician, Dipartimento di Scienze della Terra e Geologico-Ambientali, UNIBO, ITALY.
 2004 July 2004: Scientific consultant. Museum of Geology *G. Capellini*, UNIBO, ITALY.
 2000-01 August-September 2000, April 2001: Scientific consultant during the archaeological diggings at Santa Maria d'Agnano, Brindisi, ITALY.

FUNDING/AWARDS (see also Grants/Fellowship)

- 2014-17 **FP7-PEOPLE-2013-CIG (Career Integration Grant). Proposal title: INACMa/Inorganic Nanoparticles in Archaean Carbonaceous Matter - a key to early life and palaeoenvironmental reconstructions.**
 2014 and 2013 International Cooperation Education Program Università di Bologna(Italy)-University of Mekelle(Ethiopia).
 2012-13 MarcoPolo Mobility program, UNIBO.
 2011-12 MarcoPolo Mobility program, UNIBO.
 2011-12 South African National Research Foundation Grant.
 2008 NASA Astrobiology Institute and The American Philosophical Society/NAI and Lewis and Clark Found for Exploration and Field Research in Astrobiology Award.
 2008 MarcoPolo Mobility program, UNIBO.
 2006-07 Italian-German VIGONI/CRUI-DAAD International Cooperation Program 2006 -07 mobility fellowship.
 2006-07 Italian-France/CNR-CNRS International Cooperation Program 2006-07 mobility fellowship.

- 2007 MarcoPolo Mobility program, UNIBO.
- 2006 Exploration Fund of the Explorers Club (NY-USA) Special Found Award: Diversa Corporation Award for microbial science.
- 2006 MarcoPolo program, UNIBO.

OTHER PROFESSIONAL ACTIVITIES/SERVICE

- Member of committee** *Management Committee Substitute of the E-COST-TD1308: Origins and evolution of life on Earth and in the Universe (ORIGINS) (since 2014)*
- Editorial Board Member** *Astrobiology (since 2012)*
Journal of Astrobiology & Outreach (since 2013)
- Editor (since 2012)** *Bentham eBook Science series "Frontiers in Paleontology"*
- Ad-Hoc Rev. (since 2008)** *Astrobiology, Bulletin of Geological Society of America, Earth and Planetary Science Letters, Geobiology, Geo-Marine Letters, Ore Geology Reviews, Planetary and Space Science, Review of Palaeobotany and Palynology, Sedimentary Geology, Springer Book*
- Grant Proposal Rev. (since 2008)** *Council for the Earth and Life sciences-ALW; Polish National Science Center*

Convener/Organizing in National and International conferences

- 2014 Organizing and Convener. Workshop *in Raman Technics*. BiGeA-Università di Bologna, Bologna, Italy, June 12, 2014.
- 2013 Convener. Session: M 2 Planetary Evolution, Habitability and Exploration. IX Forum Italiano di Scienze della Terra, Pisa, Italy, September 16-18, 2013.
- 2012 Convener and Chairperson. Session: *Chemistry and Geology*. 12th Sigma Aldrich Young Chemists Symposium-12th SAYCS Conference, Riccione, Italy, October 1-3, 2012.
- 2012 Convener. BG-Biogeosciences, BG8-Astrobiology and Early Evolution of Life, session *Biosignatures and their applicability to astrobiology and primitive life*. EGU General Assembly 2012, Vienna, Austria, April 22-27, 2012.
- 2011 Convener. BG-Biogeosciences, BG8-Astrobiology and Early Evolution of Life, session *Compositional imaging: at the cutting edge*. EGU General Assembly 2011, Vienna, Austria, April 03-08, 2011.
- 2011 Convener. Session: *M1-Colour markers of global-events through time*. VIII Forum Italiano di Scienze della Terra, Torino, Italy, September 19-23, 2011.
- 2011 Convener. S3.2-Greenstones belts and early life. 23rd Colloquium of African Geology, University of Johannesburg, South Africa, January 8-14, 2011.
- 2009 Convener. Session: *M2-I microrganismi come agenti geologici*. VII Forum Italiano di Scienze della Terra, Rimini, September 9-11, 2009.

International Field trip/Workshop-Scientific Committee Organizing

- 2013 Co-Field trip leader during the CoCarde Workshop and Field Seminar Bridging off-shore and on-land research on carbonate mounds: common concepts and techniques, Sicily (Italy), September 23-27, 2013, organized by the University of Milano and University of Catania, and The European Science Foundation (ESF, CoCarde-ERN). Co-Author of the related field guide.
- 2012 Field trip leader to the post-conference (Oct. 28-01 Nov 2012) field trip related to the *3rd Conference on Terrestrial Mars Analogues*, October 25-27, 2012, Marrakech, Morocco. Author of the related field guide.
- 2011 Field trip leader during the CoCarde Workshop and Field Seminar *Recent and Ancient Carbonate Mounds in Morocco*, Morocco, October 24-30, 2011, organized by IOC-UNESCO, The Research Foundation Flanders (FWO, CoCarde-ICA), and The European Science Foundation (ESF, CoCarde-ERN). Co-Author of the related field guide.
- 2011 Field trip leader during the International Workshop *Geomicrobiology and Geology from Precambrian to Quaternary*, February 09-14, 2011, Marrakesh, Morocco, organized by IbnBattuta Center, ESA, NASA, Open University, and University of Marrakesh. Co-Author of the related field guide. Co-Author of the related field guide.
- 2007 Co-Field trip leader during the excursion *Class of Desert*, December 01-05, 2006, Erfoud, Morocco, organized by UNESCO Field Action. Author of the related field guide.

Mentored Student

PhD Student

- 2014 Co-Supervisor of a PhD Thesis of Miss Mennani Imane, Faculté des Sciences et Techniques University Caddi Ayadd, Marrakech (expected completion date: 12/2016). She will also obtain an European PhD from the Unin. of Bologna.
- 2010-13 Co-Supervisor of the PhD Thesis of Mr Fulvio Franchi, Università di Bologna (completed: 03/2013). The results of his research were recently submitted for publication. At present, Dr. F. Franchi is researcher at the Istituto di Geologia Marina, CNR-Bologna, Italy.
- 2008-11 Co-Supervisor of the PhD Thesis of Dr Silvia Danise, Università di Firenze (completed: 03/2011). The results of her research were recently published. At present, Dr. S. Danise is post-doc at University of Plymouth, UK.

Ungraduate and Graduated Student

- 2014 Co-Supervisor of the BSc Thesis of Ms Fabio Messori, University of Modena e Reggio Emilia (expected completion date: 12/2014).
- 2014 Supervisor of the BSc Thesis of Miss Quinzia Palazzo, University of Bologna (expected completion date: 12/2014).
- 2013-14 Co-Supervisor of the Master Thesis of Miss Jessenia Morales, University of Bologna (expected completion date: 06/2014).
- 2009-10 Unofficial co-supervisor of the *Memoire de Master2* of Mr Emmanuel Ormea, Université de Poitiers. Supervisor: Prof A. El Albani (abder.albani@univ-poitiers.fr), Université di Poitiers. Ph. D. student at the Unversite de Bordeaux, France.
- 2002-03 Unofficial co-supervisor of the *Master Thesis* of Mr Massimiliano Dall'Ara, Dipartimento di Scienze della Terra e Geologico-Ambientali, UNIBO. Supervisor: Prof R. Barbieri (roberto.barbieri@unibo.it), UNIBO.
- 2001-02 Unofficial co-supervisor of the *Master Thesis* of Ms Elisa Pagani, Dipartimento di Scienze della Terra e Geologico-Ambientali, UNIBO. Supervisor: Prof R. Barbieri (roberto.barbieri@unibo.it), UNIBO.

Teaching experiences

- Graduate -
Course: *Paleogeography of Early Earth* as part of the Module Paleogeography (AY 2013-14, 2014-15, School of Science, Università di Bologna, Italy).
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Short Course: *Scanning Electron Microscopy* (AY 2013-14, University of Mekelle, Ethiopia).
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hort Course: *Early Earth: Palaeoenvironmental reconstruction* (AY 2012-13, University of Mekelle, Ethiopia).
- Ungraduate -
Course (scheduled): *Astrobiology* (AY 2014-2015, UNIBO).
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ourse: *Evolution of Early Earth and Life* (AY 2012-2013, 2013-14, UNIBO).
- BSc -
Honours Course: Carbonate Sedimentology as part of the Module Basin Analysis-GLG0017 (AY 2011-12 and AY 2012-13, Faculty of Science, University of Johannesburg, South Africa).
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Course: Fossil Traces and Analytical Techniques applied in microbial palaeontology as part of the Modules Palaeontology and Micropalaeontology (AY 2008-09 and AY 2010-11, Faculty of Science, Università di Bologna, Italy).
- Un-Graduate -
Course: Fossil Trace and Microbial palaeontology as part of the Modules Palaeontology and Micropalaeontology (AY 2006-07, AY 2007-08, 2009-10, 2010-11 Faculty of Science, Università di Bologna, Italy).

SELECTED SPECIALIZED TRAINING **in Geobiology/Geology/Astrobiology**

- 2011 International CoCarde Workshop and Field Seminar: Recent and Ancient Carbonate Mounds in

- Morocco. Rabat, October 24-30, 2011. Fully granted.
- 2010 International Workshop working group: Archemat field workshop, Pongola - Barberton - Transvaal, South Africa. August 08-15, 2010. Fully granted.
- 2009 ESF/European Science Foundation - Archaean Environmental Studies Project short course: Peering into the Cradle of Life. Mekrijärvi, Finland, August 23-30, 2009. Fully granted.
- 2008 Portland State University course: Astrobiology in Yellowstone Park Laboratory Course. Yellowstone National Park, US. July 8-15, 2008.
- 2008 ESF/European Science Foundation - Archaean Environmental Studies Project, working group: Archaean Environment: the habitat of early life, Vienna, Austria. April 11-12, 2008. Fully granted.
- 2005 International Workshop working group: Fluid seepages/mud volcanoes in the Mediterranean and adjacent domains, Bologna, October 19-22, 2005. Fully granted.
- 2005 CNRS school: Exobio'05. Propriano, Corse, France. September 24-October 01, 2005.
- 2004 International Atelier organized by Association des Sédimentologues Français: Microbialites and microbial communities in sedimentary systems, Paris, September 06-09, 2004.

in Microscopy

- 2010 IMM-CNR, Bologna, Italy, working training at on HR-TEM and STEM, November 7-13, 2012. Fully granted.
- 2008 Fondazione Bruno Kessler, Bologna, Italy, working training at on ToF-SIMS and SEM-EDX, 14-18 April 2008, 22-29 November 2009. November 22-30, 2010.
- 2007 Fei Academy, course: 3D-EM/Electron Tomography. Eindhoven, The Nederland. October 29-November 02, 2007. Fully granted.
- 2007 Centro Ricerche ENEA Casaccia, SIMS course: Scanning electron and transmission images: acquisition, data analyses and storage (*translation*). October 09-10, 2007. Roma, Italy.
- 2007 FIST GEOITALIA 2007, course: Analytical techniques applied to the characterization of mineral fibers (*translation*). Rimini, 11 September 2007.
- 2006 Short courses, Centre for Microscopy and Microanalysis, University of Western Australia, Perth, Australia, June and July, 2006: Electron Microprobe Analyses (EMPA), Variable Pressure Scanning Electron Microscope (VPSEM), Scanning Electron Microscope (SEM) and Digital Image Manipulation and Storage (DIMS).
- 2005 Università di Milano, short course: Digital Camera and Microscopy (*translation*). Milano, Italy. June 17, 2005.
- 2005 Università di Modena e Reggio Emilia, theoretical-practical school: Focused Ion Beam. Modena, Italy. September 20-22, 2005.
- 2004 Università di Milano, short course: Fluorescence Microscopy. Milano, Italy. June 16, 2004.

RESEARCH MOBILITY PERIODS (ONLY MONTHLY STAY OR LONGER)

- 2013/4 months Visiting Professor at the Pacific Northwest National Laboratory, Richland, Washington State, US. Analytical work based on Raman, Focused Ion Beam and HR-Transmission Electron Microscopes.
- 2010/1 month Visiting researcher at University of Kwa-ZuluNatal, Durban, South Africa. Fieldwork.
- 2007/1 month Visiting researcher at the CBM-CNRS, Orléans, France. Analytical work.
- 2007/1 month M2007/64PE268 researches cruise on the Royal Netherlands Institute for Research vessel R.V. Pelagia. The cruise started in Lisbon (Portugal) and ended in Portimao (Portugal). All activities were carried out in Moroccan territorial waters.
- 2007/3 months Visiting researcher at the Geology lab, IO-BAS Academy of Sciences, Varna, Bulgaria. Analytical and fieldwork.
- 2006-07/1 month Visiting researcher at CBM-CNRS, Orléans, France. Analytical work.
- 2006-07/3 months Visiting researcher at the Palaeontology Institute GeoZentrum Nordbayern, Universitat Erlangen-Nurnberg, Erlangen, Germany. Analytical and fieldwork.

GRANTS AND FELLOWSHIP/INVITED SEMINAR-LECTURES/DISSEMINATION

Grants/Fellowship

- 2012 South African National Research Foundation Travel Grant related to attend the 12th European

- Workshop on Astrobiology-EANA 2012, October 15-17, 2012, Stockholm, Sweden.
- 2010 ESF/European Science Foundation grant, Archaean Environmental Studies Project, to attend meeting "Analysing the Archaean", Utrecht, The Netherlands, 28 June-01 July 2010. Declined.
- 2007 ESF/European Science Foundation Exchange fellowship (N. 1242), Archaean Environmental Studies, covering the research mobility period in France (see *Section Research Mobility Periods*).
- 2007 Full CNRS Grant to attend the school: La rotation du Soleil et des étoiles. Obernai, Strasburg, France. 11-15 June 2007.
- 2007 Mobility fellowship of the Italian Ministry of Foreign Affairs and Bulgarian Ministry, covering the research mobility period in Bulgaria (see *Section Research Mobility Periods*).
- 2006 Conferences grant to attend the 6th Astrobiology European Workshop, Lyon, France, October 16-18, 2006.
- 2005 Conferences grant to attend the VI Planetary Sciences Conference, Aosta, Italy, January 24-29, 2005.
- 2003 E.A.N.A. Travel Grant to attend the 3th Astrobiology European Workshop, Madrid, Spain, November 18-20, 2003.
- 2003 Alenia Spazio Conference Grant to attend the Planetary Sciences Conference, Gallipoli, Italy, September 15-19, 2003.
- 2002 S.A.Y.C.S. Conference grant to attend the 2° S.A.Y.C.S.-1°SIGMA Aldrich Young, Chemists Symposium, Riccione, Italy, October 07-08, 2002.
- 2001 3-year Ph. D. Fellowship of the Università di Modena e Reggio Emilia, Italy.
- 03
- 2001 Fellowship of the Ministero Italiano degli Esteri and Moroccan Ministry. Declined.
- 1999 Full grant of the Eurobasin School to attend the school: Tectonic control and petroleum trap formation. Université P. & M. Curie and Institut Français du Pétrole, Paris, France, November 29-December 04, 1999.

Invited seminar/lectures

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- Invited talk: *Extreme environments and Life - from Early Earth to Mars*. Dipartimento di Fisica e Geologia, Università di Perugia. July 09, 2014. In Italian.
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- Invited talk: Applications of Raman Techniques in Earth Sciences. International Workshop on 3D Raman Imaging and Correlative Scanning Microscopy Techniques, Università di Bologna. June 12, 2014. In English.
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- Invited talk: *Astrobiology: Life on Earth and in the Universe*. Osservatorio di Radioastronomia, Medicina, Bologna. June 06, 2014. In Italian.
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- Invited lecture: *Planetary Environments and Origin of Life*. Scuola di Scienze, Dipartimento di Ingegneria e Geologia, Università di Chieti-Pescara, Italy. March 13, 2014. In Italian.
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- Invited lecture: Earth's Early Environment and Life. Scuola di Scienze, Dipartimento di Ingegneria e Geologia, Università di Chieti-Pescara, Italy. April 30, 2013. In Italian.
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- Invited talk: Biosignatures in rocks, I Workshop of Astro and Paleobiology and New Techniques to Study Ancient Life, Universidad de Sao Paulo, Sao Paulo, Brazil. November 08, 2012. In English.
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- Invited talk: Cold seep system in the rock record, I Workshop of Astro and Paleobiology and New Techniques to Study Ancient Life, Universidad de Sao Paulo, Sao Paulo, Brazil. November 08, 2012. In English.
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- Invited talk: Raman Microscopy for Geobiology Applications. 9th Confocal Raman Imaging Symposium, Ulm, Germany, September 26-27, 2012. In English.
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- Invited seminar: Biosignatures in Geobiology and Astrobiology, PPM Seminar Talk, University of Johannesburg, Johannesburg, South Africa, March 23, 2012. In English.
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nvited seminar: Biosignatures in Rocks (*translation*), Università di Bologna, Bologna, Italy, January 23, 2012. In Italian.

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nvited talk: Raman Microscopy in Geobiology, ADI SCientific, Advanced Laboratory, Johannesburg, South Africa, May 05, 2011. In English.

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nvited seminar: Scientific discovery in palaeontology: implication for origin and evolution of life, LeStudium, Institute for Advances Researches, Orléans, France, January 06, 2011. In English.

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nvited seminar: The evolution of photosynthesis: a geological and biogeochemical study of ancient microbial mats and stromatolites, Amphithéâtre Charles Sadron, CNRS, Orléans, France, June 17, 2010. In English.

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nvited seminar: Life in the extreme environment (*translation*), XIX^{ème} Festival de la Science, Fleurance, France, August 10, 2009. In French.

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nvited seminar: The origin of life (*translation*), EVOLUTHON – La marathon de l'évolution, Fleurance, France, August 08, 2009. In French.

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nvited seminar: Geologic Evidence of Early Life: Implication for the Search for Life on Mars (*translation*), CESR-Centre d'Etude Spatiale des Rayonnements, Toulouse, France, July 03, 2009. In French.

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nvited seminar: Microbial Signatures in Rock Records: Life-Like or Life?, Oregon Health and Science University, Portland, Oregon, USA, October 24, 2008. In English.

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nvited seminar: Fossil bacteria and carbonate hydrocarbon seeps in the geologic record (*translation*), CBM-CNRS, Orléans, France, December 14, 2007. In French.

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nvited lecture: Microbial palaeontology, origin of life and astrobiology (*translation*), Università di Cagliari, Italy, November 28, 2007. In Italian.

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nvited seminar: Microbial palaeontology and analytical techniques: biogenicity problem (*translation*), Università di Cagliari, Italy, November 27, 2007. In Italian.

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nvited seminar: Microbial signatures in rock records: the biogenicity problem, Palaeontological Institute, Erlangen University, Germany, November 28, 2006. In English.

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nvited seminar: Seafloor seepages, methane-related carbonate fabrics and clues for the search for gas hydrate systems in the geological record, Geological Survey of Western Australia, Perth, Western Australia, September 13, 2006. In English.

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nvited lecture: Planet habitability: the origin of life (*translation*), Università "G.d'A.", Chieti, Italy, December 5, 2005. In Italian.

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nvited lecture: Microbial communities and sedimentary deposits - methane-seep (*translation*), Università "G.d'A.", Chieti, Italy, June 23, 2005. In Italian.

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nvited seminar: Palaeoecology and bioerosion (*translation*), Università di Modena e Reggio Emilia, Italy, October 29, 2001. In Italian.

Dissemination initiatives/activities

2013 article for the Alma Mater Studiorum contribution "Laboratorio a cielo aperto", *Natura*, 98-99, July 2013.

2012 Collaboration to the organization of the section of Geology Department, University of Johannesburg, at the South African Week for Science organized by University of Johannesburg. August 2012.

- 2011 (interviewed) “Chercheurs du monde entier a Orléans”, La République du Centre, Orléans, January, 2011.
- 2009 (interviewed) “Le Studium: amplifier la lisibilité scientifique de la région Centre”, Journal L’Étudiant Autonome, Orléans, N. 25, pag. 8, March 2009.
- 2009 Collaboration to the organization of astrobiological section of the “Pole de l’Espace et des Etoiles”, Museum of Astronomy, Nancay, France.
- 2009 Collaboration to the organization of astrobiological section of the “Fête de la Science”, CBM-CNRS, Orléans, France. November 2011.
- 2008 - (interviewed) “Alla ricerca di forme di vita primitive”, La Fiamma, Sidney, N. 160, pag. 34, August 2008.
- 2003 Member of the Scientific committee of the installation *Lingue di pietra* organized by Museum of Geology of the Università di Bologna, Italy, December 12, 2003 to August 31, 2004.

RESEARCH PROJECTS

- 2011 **Participant.** ESF Research Network *Cold-Water Carbonate Mounds in Shallow and Deep Time – The European Research Network (COCARDE-ERN)* – Standing Committee for Life, Earth and Environmental Sciences (LESC).
- 16
- 2013 **Scientific Team.** The proposal *SXRF nanoimaging of an oldest bona fide microbial cell fossil*, have deposited in march 2013 for beam time at ESRF/Experimental Method.
- 2012 **PI.** *3D neutron and X-Ray tomography of glendonite nodules from Karoo basin, South Africa: study of microfracture distribution.* The South African Nuclear Energy Corporation Limited, Necsa, Pretoria, South Africa.
- 2012 **PI.** *3D neutron and X-RAY tomography of cometary carbon-Titanium grains in ferruginous terrestrial sediments: the problem of origin.* The South African Nuclear Energy Corporation Limited, Necsa, Pretoria, South Africa.
- 2010 **PI.** Integrated Infrastructure Initiative - Transnational access to ANNA facilities. Project title: *The nature of bacteriomorphs: biogenicity and its detection N. 3.*
- 2010 **PI.** Project title: *Ancient fields of Moroccan mud mounds: a unique environment on Earth as terrestrial analogs for Mars and clues to presence of fossil/live microorganisms on Mars.* Project founded by the “EUROPLANET ACTIVITY – TNA1 (Planetary Field Analogues)”.
- 2010 **Collaborator.** MIUR-PRIN 2010-2011. Project title: *Comparative geomicrobiology of the mounds in the Moroccan Sahara: implications for Mars astrobiology.* PI: Prof R. Barbieri (roberto.barbieri@unibo.it), Università di Bologna, Italy.
- 11
- 2009 **Collaborator.** ANR ARCHAEMAT 2009-2013. Project title: *Microbial mats and the evolution of photosynthesis on the early Earth.* PI: Dr F. Westall (westall@cnr-orleans.fr), CBM-CNRS, Orléans, France.
- 13
- 2009 **Scientific Team.** *ICDP-2009/01 Barberton drilling project: Peering into the Cradle of Life* (http://www.icdp-online.org/front_content.php?idcat=1502). PI: Prof. N.T. Arndt (Nicholas.Arndt@ujf-grenoble.fr), Université Joseph Fourier de Grenoble, France.
- 12
- 2009 **PI.** Integrated Infrastructure Initiative Project n. ANNA_TA_UC3_RP001 - Transnational access to ANNA facilities. PI: *The nature of bacteriomorphs: biogenicity and its detection N. 2.*
- 2008 **Collaborator.** Integrated Infrastructure Initiative, 2008. Project n. 026134(RI3) ANNA - Transnational access to ANNA. Project title: *The nature of bacteriomorphs: biogenicity and its detection N. 1.* PI: Dr F. Westall (westall@cnr-orleans.fr), CBM-CNRS, Orléans, France
- 2007 **Collaborator.** European Science Foundation, Program EuroDIVERSITY, Project *MiCROSYSTEMS* (referent of the Italian group: Prof. R. Barbieri, Università di Bologna, roberto.barbieri@unibo.it).
- 11
- 2004 **Participant.** International Geoscience Program (IGCP), Project No. 499: *Evolution of Ecosystem and Climate in the Devonian.* Project leaders: P. Königshof (Germany), J. Lazauskiene (Lithuania), E. Schindler (Germany), Volker Wilde (Germany), N. Yalçin (Turkey).
- 09
- 2006 **Collaborator.** MUR-PRIN 2006-07. Project title: *Analisi integrata dei depositi solfatici su Marte.* PI: Prof. G.G. Ori (ggori@irsps.unich.it), Università di Chieti-Pescara, Italy.
- 07
- 2006 **Collaborator.** Progetti Strategici d’Ateneo, Giovani Ricercatori, Università di Bologna. Project title: *Fillosilicati: origine della vita e nanobioelettronica.* PI: Dr. G. Valdrè (giovanni.valdre@unibo.it), Università di Bologna.
- 07
- 2005 **PI.** Project in collaboration project with FEI Company, Italia (referent: F. Tatti, Fei Company, Italy;

- francesco.tatti@fei.com). Project title: *Il microscopio FIB nello studio di strutture biogenicamente indotte e preservate in rocce sedimentarie*. Uno studio pilota.
- 2003-04 **Collaborator.** MUR-PRIN 2003-04. Project title: *Effetti geologici associati al rilascio di gas idrati: esempi attuali e fossili*. PRIN 2003-04. PI: Prof. D. Fontana (daniela.fontana@unimore.it), Università di Modena e Reggio Emilia, Italy.
- 2003 **Collaborator.** Astrobiology Programme, Agenzia Spaziale Italiana (ASI) 2003. Project title: *Potenziale astrobiologico di ecosistemi chemiosintetici*. PI: Prof. G.G. Ori (ggori@irsps.unich.it), Università di Chieti-Pescara, Italy.
- 2002-03 **Collaborator.** MUR-PRIN 2002-03. Project title: *Analoghi terrestri per Marte e altri pianeti del Sistema Solare*. PI: Prof. G.G. Ori (ggori@irsps.unich.it), Università di Chieti-Pescara, Italy.
- 2001-02 **Collaborator.** MIUR-PRIN 2001-02. Project title: *Processi e prodotti nella registrazione geologica di comunità microbiche chemio sintetiche*. PI: Prof. R. Barbieri (roberto.barbieri@unibo.it), Università di Bologna, Italy.

PROFESSIONAL AFFILIATIONS

Since 2014: *Marie Curie Alumni Association (MCAA)*

Since 2012: *Società Paleontologica Italiana (S.P.I.)*

Since 2009: *Société Française d'Exobiologie (S.F.E.)*

Since 2005: *Società Italiana Scienze Microscopiche (S.I.S.M.)*; *International Federation of Societies for Microscopy (I.F.S.M.)*; *European Microscopy Society (E.M.S.)*; *European Focused Ion Beam Users Group (E.F.G.U.)*

LANGUAGE SKILLS

Italian (mother language); English fluent; French fluent

PUBLICATIONS

Cover



Cover of journal *Astrobiology*, vol. 7(2), 2007. The image is related to the article *Cavalazzi, 2007*, published on the same vol.

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16. Cavalazzi B, 2007. Chemotrophic filamentous microfossils from the Hollard Mound (Devonian, Morocco) as investigated by focus ion beam. *Astrobiology* 7, 402-415.
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20. Barbieri R, Cavalazzi B, 2005. Microbial fabrics from upper Tertiary cold seep carbonates, northern Apennine, Italy. *Palaeogeography Palaeoclimatology Palaeoecology* 227, 143-155.
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- Pondrelli M, Rossi AP, Le Deit L, Glamoclija M, Cavalazzi B, Fueten F, van Gasselt S, Hauber E, Franchi F, 2014. In Rocha R, Pais J., Kullberg JC, Finney S (eds): Equatorial Layered Deposits in Arabia Terra, Mars: Stratigraphy and Process Variability. STRATI2013. Springer Geology, pp. 343-347.
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- Cavalazzi B, George AD, 2006. Stromatoliti attuali dei laghi costieri del Western Australia. PaleoItalia 15, 12-15.
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- Cavalazzi B, Barbieri R, Ori GG, 2004. Stromatolitic fabrics of chemo-ecosystem from Devonian carbonate mounds, Anti-Atlas, Morocco. Association des Sédimentologistes Français 46, 29-30.
- Cavalazzi B, Raffi I, Biondi R, 2002. Ceratoliths in the Lowermost Pliocene of the Eastern Mediterranean: correlation to the Equatorial Atlantic. Italia. Journal of Nannoplankton Research 24, 81.

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