

CURRICULUM VITAE

M. Francesca Cotrufo, PhD

Dept. Soil and Crop Sciences
Colorado State University
Fort Collins, CO, USA

tel: (970) 4916056
fax: (970) 4911965
E-mail: francesca.cotrufo@colostate.edu

DOB: 3/29/68

EDUCATION:

1991 *Laurea* in Biology, University of Naples, Italy (110/110 + laude)
1995 Ph.D. Soil Ecology, Lancaster University/Institute of Terrestrial Ecology, UK

POSITIONS HELD:

2008- date Full Professor, Dept. of Soil and Crop Sciences, Colorado State University, Fort Collins, CO, USA
2008-date Senior Scientist, Natural Resource Ecology Laboratory, Colorado State University
2006-2008 Full Professor, Dept. Environmental Sciences, Second University of Naples, Italy
2000-2006 Assoc. Professor, Dept. of Environmental Sciences, Second University of Naples
1994-2000 Research Scientist, Dept. of Environmental Sciences, Second University of Naples

RESEARCH INTERESTS

I am a soil ecologist with leading experience in the field of litter decomposition and soil organic matter C and N dynamics, and in the use of isotopic methodologies in these studies. My main research interest is in the understanding of C and N fluxes from plant or pyrogenic organic matter to soil, water and the atmosphere, and their response and feedback to global environmental changes. I also pursue applied research to propose soil management practices that increase soil quality and fertility and mitigate climate change, as for example the study of biochar in soils. As a scientist fully aware of the current and future challenges expecting humanity, I am interested in promoting research education, and outreach activities to help mitigating the current human impacts on the Earth System and assure a better sustainable path for humanity.

RESEARCH PROJECTS:

2016 : Quantification of pyrogenic carbon in the EU LUCAS soil samples, European Commission (PI: € 14,592).
2016: Study of the effects of engineered biocarbon and microbial amendments on maize production under full and limited irrigation (PI: \$ 19,880).
2015-2018: Measurement and Modeling of Soil C Storage and Greenhouse Gas Emissions from Southern Pine Biofuel Feedstocks, Shell (co-PI: \$620,955)
2015-2017: Toward a reduction in the environmental impacts of energy production from slash pine: Understanding potential for soil C sequestration and mitigation of greenhouse gas emissions, CSU-Shell (PI, \$160,000)
2014-2015: US-Switzerland-Australia Site Visits: Expanding and Advancing Black Carbon Research through new International Collaborations, NSF-CNIC (PI, \$50,000).
2014-2019: Biofuel Feedstocks from Beetle-Killed Wood: Bioenergy Alliance Network of the Rockies (BANR), USDA-NIFA (Co-PI; \$9,850,000)
2014-2015: Developing scholarly excellence across the aquatic-terrestrial interface: Understanding the hydro-bio-geo-chemistry of extreme events, CSU Water Center (Co-PI; \$24,982).
2013-2016: Understanding litter input controls on soil organic matter turnover and formation are essential for improving carbon-climate feedback predictions for Arctic, tundra ecosystems, DOE (co_PI; \$898,997)

- 2013-2015: “Critical need for continued growth & expansion of the EcoCore Analytical Facility”. CSU VPR (Co-PI; \$66,368).
- 2013-2016: Decision Support Tools, Drought Tolerance, and Innovative Soil and Water Management Strategies to Adapt Semi-arid Irrigated Cropping Systems to Drough, USDA-CIG (CSU-PI; \$880,000)
- 2012-2013: “Full accounting of pyrogenic-C dynamics at the watershed scale: a unique opportunity offered by the High Park Fire”, NSF (PI; \$197,000)
- 2012-2013: Research Experience for Undergraduate, NSF (PI; \$7,500).
- 2012-2013: Research Experience for Teachers, NSF (PI; \$15,000).
- 2011-2014: “Soils, Land Use and Climate Change: a new Baccalaureate concentration”. USDA-NIFA-HEC (PI, \$174,617).
- 2011-2013: “EcoCore: Rebranding and Refurbishing the Natural Resource Ecology Analytical Laboratory to Address an Evolving Mission”. CSU VPR (Co-PI; \$179,102).
- 2011-2012: “Biochar for the Colorado agricultural industry: a research assessment of energy, economic and environmental benefits. 2011 Advancing Colorado’s Renewable Energy Grant Program, Colorado Department of Agriculture (PI; \$49,909).
- 2011-2012: Research Experience for Undergraduate, NSF (PI; \$7,500).
- 2011-2012: Research Experience for Teachers, NSF (PI; \$15,000).
- 2010-2011: “Women, Population and the Environment” – Global Challenge Research Team, School for the Global Environment and Sustainability, Colorado State University (PI; \$14,600).
- 2010-2011: “Biochar: an assessment of potential energy, environmental and economic benefits”. CSU – Green Energy Supercluster internal seed grant (PI; \$20,000).
- 2010-2011: Research Experience for Teachers, NSF (PI; \$15,000).
- 2009-2113: “A novel experimental and modeling study of C and N dynamics between litter, soil and the atmosphere as affected by soil fauna and litter quality” (Bluestem) NSF (PI; \$798,491).
- 2010-2011: “Summer Soil Institute: Addressing Environmental Changes and Emerging Techniques from Microbial to Global Scales”. USDA CSREES AFRI (Co-PI; \$149,859)
- 2009-2010: “Salt Cedar and Russian Olive Demonstration Act (HR2720) Science Assessment and Ongoing Invasive Species-related Research Projects” (Tamarisk). Forest Service USDA (PI; \$123,500)
- 2008-2010 “Impatto della conversione di agroecosistemi da seat-aside a coltivazione per biocarburanti sul carbonio organico del suolo e sulle emissioni di gas ad effetto serra”. PRIN-MIUR (CoPI; € 42,000).
- 2006-2011: NITROEUROPE IP, European Community VII Framework program, www.nitroeuropa.eu (Steering Committee Member, Activity Leader, PI; € 247,000)
- 2006-2009: CARBOITALY, FISR Italian Ministry of University and Research -MIUR (Unit coordinator, PI; € 520,100)
- 2007: “Carbon isotope tracing in forest ecosystems”. Galileo 2007 Italy-France exchange program (Responsible for the Italian team; € 8,500).
- 2005-2007: “Advanced laser techniques to investigate carbon isotope discrimination during decomposition”, ToK Marie Curie Project, European Community VII Framework (Coordinator; €107,882).
- 2004-2009: CARBOEUROPE IP, European Community VII Framework program, www.carboeuropa.org (Internal Advisory Board Member, PI; € 70,000)
- 2004-2006: “Conventional and accelerator mass spectrometry in archaeometry and environmental sciences”, Italian Ministry of University and Research, MIUR_PRIN (Co_PI; €30,000)
- 2003-2006: “An integrated European scientific infrastructure for global change studies on forest and agroforest ecosystems utilizing FACE Technology- EUROFACE”, European Community VI Framework program, www.unitus.it/euroface/ (Coordinator of the Work Package 8: Determinants of C losses and decomposition, PI; €72,000).
- 2003-2006: “Mediterranean ecosystems under increasing drought- MIND”, European Community VI Framework program, (Coordinator of the Work Package 3: Soil C fluxes, Co_PI; €70,000).
- 2003-2006: “Novel physics methodology in ecological research”- International PhD course program, MIUR (Coordinator; € 57,000).

- 2003-2005: “Implementation and use of an innovative isotope methodology for the quantification of C fluxes and stores in soils”. Project funded by the Assessorato alla Ricerca Scientifica della Regione Campania, Legge 5 (Coordinator; €38,700).
- 2002-2004: “Development and application of isotopic methodologies in environmental research - DAIMER”, ToK Marie Curie Project, European Community V Framework (Co_PI; €50,000).
- 2001-2006: “Carbon Storage in European Grasslands”, European Community COST Action 627 (Coordinator of WP1: “Plant, soil and soil organisms”, Italian Delegate).
- 2001-2004: “Development and application of isotopic methodologies to environmental science research”- International PhD course program, MIUR (Coordinator, €38,218)
- 2000-2003: “Forest carbon-nitrogen trajectories: FORCAST”, European Community V Framework (PI; €136,070).
- 2000-2008: PIANOSALAB project (LTER and Fluxnet Italian site), National Research Council (Steering committee member, PI).
- 1998-2001: “A FACE experiment on a short rotation poplar plantation – POPFACE”, European Community IV Framework (Investigator)
- 1996-1999: “Carbon and Nitrogen interactions in Forest ecosystems – CANIF”, European Community IV Framework (Investigator)
- 1995-1998: SAVAFLUX, European Community IV Framework (Co-PI)
- 1994-1997: MEGARICH, European Community IV Framework (Investigator)

RESEARCH FELLOWSHIPS & INTERNATIONAL COLLABORATIONS:

- 2015: OECD Research Fellow and visiting scientist at the Joint Research Center of the European Union.
- 2012 to date: Research Collaboration with Prof. Peter Grace, Brisbane University Australia, on the CFF project.
- 2009 to date: Research Collaboration with Profs. Ivan Jansen and Reinhart Ceulemans, University of Antwerpen (Belgium) on the inpair-P project and other projects.
- 2008 to date: Research collaboration with Dr. Sebastien Fontaine, INRA (Clermont-Ferrand, France) on a research project for the study of priming effects in different soil organic matter fractions of world soils.
- 2008: Research collaboration with Dr. Jerome Ngao, INRA (Clermont-Ferrand, France) on a research project for the study of isotopic discrimination and litter chemistry changes during litter decomposition.
- 2005: Short term Research visit at Oak Ridge National Laboratory and at the University of Duke to conduct a dendroecology study at the forest FACE facilities.
- 2004 and 2005: Short term Research visits at the Dept. of Biology University of Illinois, Urbana, upon invitation of Prof. Steve Long, to advise on soil studies conducted at the SoyFACE.
- 2000: Short term Research visit at the Dept. of Biology, University of San Diego, upon invitation of Prof. Walter Oechel, to conduct soil study at the Open Top Chamber facility of Sky Oak, CA.
- 1998: Smithsonian Institution Research fellowship for a three months research visit at the Smithsonian Environmental Research Centre. During this period, field work was conducted at the FACE facilities at Oak Ridge National Laboratory, at Duke University and at the Smithsonian field station at the Kennedy Space Centre, NASA. Isotope analyses were performed at the Isotope Laboratory, Utah University.
- 1996: EU COST Action 619 Research Fellowship for a one month research visit at AB-DLO, Wageningen, NL
- 1995: European Environmental Research Organization Research Fellowship for a three months research visit at AB-DLO, Wageningen, NL.
- 1994-95: British Council Research Fellowship to conduct research at ITE Merlewood, UK.

TEACHING/EDUCATION:

Courses

Course leader (Colorado State University, Dept. of Soil and Crop Sciences)

Graduate course: “Terrestrial Ecosystems Isotope Ecology”, SOCR670 - spring semester odd years

Undergraduate course: “Soil and Global Change: Science and Impacts”, SOCR400 – fall semester

Graduate Course: “Soil and Global Change Science and Impacts”, SOCR500 – fall semester

(proposed)

On-line course: "Soil and Global Change: Science and Impacts", SOCR400 (in development)

Seminar: "Litter decomposition: re-considering paradigms and methods", ECOL592- Fall 2011

Co-Instructor (Colorado State University, Dept. of Soil and Crop Sciences)

Undergraduate course: "Soil Ecology", SOCR441 - spring semester

Summer Schools

Instructor for the module on "Soil Organic Matter dynamics and stable isotopes" in the: Summer Soil Institute: Addressing Environmental Challenges with Current and Emerging Techniques from Microbial to Global Scales, <http://soilinstitute.nrel.colostate.edu/index.html>, CSU, every summer.

Classes taught

Course leader (Second University of Naples)

Undergraduate course: "Applied Ecology", spring semester (every year), Dept. of Environmental Sciences.

II level degree course "Global Environmental Changes", Fall semester (every year), Dept. of Environmental Sciences.

II level degree course "Conservation Biology", Fall semester (every year), Dept. of Environmental Sciences.

Graduate course "Biogeochemical Cycles", flexible (every other year), Dept. of Environmental Sciences.

Graduate series of seminars on "Technique of presentation of scientific results", flexible (every other year), Dept. of Environmental Sciences.

Guest lecturer

2014: In the course: "Ecosystem Ecology", NR 601, Colorado State University

2013 to date: In the course: "Bioenergy", AGRI/ENGR 601, CSU

2012 to date: In the course: "SUPER: Skills for Undergraduate Participation in Ecological Research", CSU

2011 to date: In the course: "Ecosystem Ecology", RS 351, Colorado State University

2008 to date: In the course: "Soil-Plant-nutrient relationships", Colorado State University

2010 to 2013: In the course: "Global Change Ecology, Impacts and Mitigation", Colorado State University

2001: Course: "Global Change and Water Resources in the Mediterranean Region", University of Castilla-La Mancha, Toledo (Spain), RICAMARE project course.

Commissioned Courses

2011: "Energy Policies Toward a Better World--the U.S. and the EU." For the course "Colorado Council for Economic Education" (CCEE), Denver, CO.

2005: "Environment and Environmental matrices" for the professional course on *Tecnico Superiore Ambiente, Energia e Sicurezza (in azienda)*, P.O.R. Campania Region.

2000: "Ecology" for the High qualification course on *Esperto del trasferimento di tecnologie per la tutela e valorizzazione dei beni Ambientali*, Ministry of University and Research

1999- "Ecology" for a professional course on: *Responsabile del sistema di gestione ambientale*.

Invited Seminars

- Accademia dei Gergofili, Firenze (I)
- AB-DLO at Arhem and at Wageningen (NL)
- Dept. of Biological Sciences dell'Università di Lancaster (UK)
- Dept. of Biology, University of Antwerp (NL)
- Dept. of Biology, University of Illinois, Urbana (USA)
- Dept. of Biology, University of Milan Bicocca (IT)
- Dept. of Biology, University of Utah, Salt Lake City (USA)
- Dept. of Forest & Rangeland Stewardship, Colorado State University (USA)
- Dept. of Earth System Science, University of California, Irvine (USA)
- Dept. of Soil Science and Biogeochemistry, University of Zurich (CH)

- Dept. of Soil & Crop Sciences, Colorado State University (USA)
- DISAFRI, University of Tuscia, Viterbo (IT)
- ETH, Zurich (CH)
- Faculty of Natural Sciences, University of Bologna (IT)
- Institute of Terrestrial Ecology, NERC, Grange-o-Sands (UK)
- Oak Ridge National Laboratory, Tennessee (USA)
- NREL, Colorado State University (USA)
- Soil Science Unit, Technical University of Munich (D)
- Smithsonian Environmental Research Centre, Maryland, (USA)

Graduate student program

Coordinator

- 2003-06: International PhD course in “Novel Physics Methodologies for Ecological Research”. Financed by the Italian Ministry of University and Research (MIUR), in collaboration with the University of Bochum (Germany), the University of York (UK), the University of Udine (Italy) and the International Center for Theoretic Physics, Trieste (Italy).
- 2001-04: International PhD course in “Isotope Methodologies for Environmental Science Research”. Financed by the Italian Ministry of University and Research (MIUR), in collaboration with the University of Bochum (Germany), the University of York (UK), the University of Udine (Italy), CNR_IAS, Porano (Italy).

Graduate Student Advisor

- 2016-date: Bethany Avera (PhD), Graduate Degree Program in Ecology, Colorado State University
- 2016-date: Samantha Moser (PhD), Graduate Degree Program in Ecology, Colorado State University
- 2014-date: Matt Ramlow (PhD), Graduate Degree Program in Ecology, Colorado State University
- 2014-date: Yamina Pressler (PhD), Graduate Degree Program in Ecology, Colorado State University
- 2013-date: Sarah Fulton-Smith (PhD), Soil and Crop Sciences, Colorado State University
- 2013-date: Erica Foster (MS), Graduate Degree Program in Ecology, Colorado State University
- 2011-2014: Andrew J. Horton, (MS), Graduate Degree Program in Ecology, Colorado State University
- 2009-2014: Jennifer Soong (PhD), Graduate Degree Program in Ecology, Colorado State University
- 2006-2010 Andrea Veturi (PhD), Thesis: “*Characterization of soil organic matter in the soil of European ecosystem under contrasting land uses, by means of physical and chemical fractionation procedures*”. International Graduate Degree Program in “Novel physics methodology in ecological research”, Second University of Naples
- 2003-06 Daniela Piermatteo (PhD). Thesis: “*Modeling C and N cycles in Mediterranean terrestrial ecosystems*”, International Graduate Degree Program in “Novel physics methodology in ecological research”, Second University of Naples
- 2003-06 Fabio Marzaioli (PhD), Thesis: “*Assessing soil organic matter dynamics by means of ¹⁴C bomb spike: a feasible tool to predict terrestrial ecosystem response to climate global changes*”, International Graduate Degree Program in “Novel physics methodology in ecological research”, Second University of Naples (Co-Advisor)
- 2002-05 Ilaria Inghima (PhD), Thesis: “*Soil respiration in Mediterranean Ecosystems*”. Graduate Degree Program in “Implementation and application of isotopic methodology in environmental sciences research”, Second University of Naples
- 2002-05 Mauro Rubino (PhD), Thesis: “*Stable C isotopes as a mean to trace C fluxes during litter decomposition*”. Graduate Degree Program in “Implementation and application of isotopic methodology in environmental sciences research”, Second University of Naples (Co-Advisor)
- 2001-04 Ilaria Del Galdo (PhD), Thesis: “*Soil organic carbon dynamics and global change: the effects of land use change and increased atmospheric CO₂ concentration*”, International Graduate Degree Program in “Implementation and application of isotopic methodology in environmental sciences research”, Second University of Naples
- 2001-04 Giovanna Battipaglia (PhD), Thesis: “*Relationship between width and C and O stable isotope in tree growth rings as proxies for the tree ecophysiology and climate change: 3 case studies in*

European forest from Swiss Alps to Mediterranean Basin”, International Graduate Degree Program in “Implementation and application of isotopic methodology in environmental sciences research”, Second University of Naples

1999-2002 Raffaele A. De Pascale (PhD), Thesis: “*C and N dynamics in leaf litter decomposition across a transect of European forests*”, Graduate Degree Program in “Ecology” Univ. of Naples

Member

2015 to date Faculty of the CSU School of Global Environmental Sustainability (SoGES)
2014 to date Faculty of the CSU Water Center
2011-to 2014 Faculty of the NSF IGERT MAS BioEnergy Program
2010 to date Faculty and member of the organizing committee of the Summer Soil Institute
2008-to date Faculty of the Graduate Degree Program in Ecology, Colorado Sate University
2006 to 2008 Faculty of the International PhD course in Novel Physics Methodologies for Environmental Research, Second University of Naples, Italy

Graduate Student Committees

2015 External Examiner for Huda Alghanasi’s PhD dissertation, University Putra Malaysia
2013-to-date Doctoral Committee Member for Laurel Linch , GDPE, CSU
2013-to-date Doctoral Committee Member for Phasita Toonsiri, Soil and Crop Sciences, CSU
2013-2014 Master Committee Member for Drew Bingham, GDPE, CSU
2013-to-date Doctoral Committee Member for Charlotte Alster , GDPE, CSU
2013 External Examiner for N. Singh’s PhD dissertation, University of Zurich
2012-to-date Doctoral Committee Member for Trung Nguyen, Soil and Crop Sciences, CSU
2012-2015 Doctoral Committee Member for Jennifer Rocca , GDPE, CSU
2012-2014 Doctoral Committee Member for Suzanne Brant , Dept. of Anthropology, CSU
2012-2013 Doctoral Committee Member for Carolyn Hoagland, Soil and Crop Sciences, CSU
2011-2015 Doctoral Committee Member for Nell Campbell, IGERT Biofuel & GDPE, CSU
2010- to date Doctoral Committee Member for Paul Brewer, Dept. of Biology, CSU
2010- 2015 Doctoral Committee Member for Jocelyn Lavallee, GDPE, CSU
2010- 2014 Doctoral Committee Member for Mohamed Abulobaida, Soil and Crop Sciences, CSU
2009- 2013 Doctoral Committee Member for Zachary Sylvain, Dept. of Biology, CSU
2010-2012 Master Committee Member for Ashley , Biology, CSU
2010- 2012 Master Committee Member for Brooke Osborne, GDPE, CSU
2009- 2011 Doctoral Committee Member for A. Biagi Harper , Dept. of Atmospheric Science, CSU
2006 External examiner for PhD dissertation, University of Viterbo, Italy

Post-doctoral and Research Scientist supervision

2012-2014: Dr. Claudia Boot. Project: BC-RAPID
2010-2011: Dr. Karolien Deneff. Project: Bluestem
2009-2010: Dr. Catherine Stewart. Project: Tamarisk
2005-2008: Dr. Ilaria Del Galdo. Projects: Carboeurope/Nitroeurope
2006-2008: Dr. Ilaria Inghima. Project: Carboitaly
2006-2008: Dr. Jerome Ngao. Project: Alice
2006-2007: Dr. Mauro Rubino. Project: Campania Region Legge 5 (Co-supervisor)
2005-2007: Dr. Giovanna Battipaglia. Projects: EuroFACE/Nitroeurope
2002-2004: Dr. Jens Arne Subke. Project: Daimer

Faculty & University Services

2016: Search committee member, Dept. of Ecosystem Science and Sustainability, CSU
2015 to date: Chair of the Research Committee, and Research Advisor to the Head of the Dep. of Soil and Crop Science, CSU
2014: Search committee member, Dept. of Soil and Crop Science, CSU
2012 to date: Member of the Colorado State University Faculty Council

- 2012 to 2014: Member of the Executive Committee of the Graduate Degree Program in Ecology, CSU
 2012 to date: Designated Representative for CSU on the International Memorandum of Understanding (IMOU) between the University of Vienna Bokum (Austria) and CSU.
 2011 to date: Co-Director of Eco-Core, a CSU core facility.
 2011 to date: Member of the Executive Committee of the Natural Resource Ecology Laboratory, CSU.
 2011: Search committee member, EcoCore, Natural Resource Ecology lab, CSU
 2010: Search committee member, Natural Resource Ecology lab, Colorado State University
 2010 to date: Designated Representative for CSU on the International Memorandum of Understanding (IMOU) between the Second University of Naples (Italy) and CSU.
 2009 to date: Director of the Stable Isotope Laboratory, Natural Resource Ecology lab, CSU
 2009: Member (substitute) for the College of Agricultural Sciences of the Committee on Scholarship, Research and Graduate Education of Colorado State University
 2004-2008: Chair of Departmental Committee and College delegate for the Committee for the Orientation of incoming, enrolled and outgoing students, Second University of Naples, I
 2006-2008: Member of the Committee for the Student exchange program, Second University of Naples, I

PROFESSIONAL SERVICES:

Editorial Boards

- 2003 to date Global Change Biology (Editor; IF: 8.224)
 2005 to 2007 Ecology letters (Editor; IF: 13.042)
 2005 to date Plant and Soil (Advisory Board of Editors/ Guest Editor of 2 Special Issues; IF: 3.225)

Reviewer - Journals

Nature, PNAS, Oecologia, Ecological Monograph, Ecosystem, Global Biogeochemical Cycle, Biogeosciences, Soil Biology & Biochemistry, New Phytologist, Scandinavian Journal of Forest Research, Australian Journal of Plant Physiology, Biology and Fertility of Soils, etc.

Ad hoc Reviewer and Panelist for funding agencies

National Science Foundation (Divisions of Biological Sciences and of Geosciences)
 European Research Council
 European Science Foundation
 National Agency for the Evaluation of Universities and Research Institutes (Italy)
 Italia/Francia University exchange program
 Provincia Autonoma di Trento (Italy)
 UK National Environmental Research Council (UK)
 Fonds Wetenschappelijk Onderzoek – Vlaanderen (Belgium)

Advisory Boards

2007: Science Steering Group – Registry of Forest C sinks. Italian Ministry of the Environment
 2006-2008: Member of the Scientific Advisory board for the WWF, Italy.
 2005-2008: Delegate for the Second University of Naples - INNOVA. Regional Center of Competences for the Protection of the Campania Region Cultural and Environmental Heritage

Symposia Workshop and Conference Session Organization

August 2013: The Front Range Stable Isotope Symposium, Fort Collins, Colorado, 16 August, 2013 (Organizer).
 May 2013: 4th International Symposium on Soil Organic Matter, Nanjing, China. May 5-10, 2013 (International Scientific Committee Member)
 December 2012: Convener of the Session B026. From Plant Litter Decay to Soil Organic Matter Formation: The Missing Nexus, at the AGU Fall Meeting 2012
 July 2008: International Symposium on Soil Organic Matter Dynamics: Land Use, Management and Global Change”, Colorado Springs, Colorado, USA (member of the Scientific and Organizing committee)

November 2007: Final Conference of the ESF Programme "The Role of Soils in the Terrestrial Carbon Balance", Pont à mousson, Nancy, France (Convenior of the session on: *The impact of environmental factors on the diversity and function of the microbial communities*)

February 2007: II Conference of the NITROEUROPE project, Paestum, Italy (Local Organizer, Scientific committee member)

September 2006: XVI National Conference of the Italian Ecological Society (S.It.E.), Viterbo, Italy (Scientific committee member).

May 2006: S.It.E. workshop on: "Teaching Ecology in School", Rome, Italy (Organizer)

September 2005: XV National Conference of the S.It.E., Turin, Italy (Scientific committee member)

September 2004: JESIUM international symposium, Vienna, Austria (Convenior of the session on: *Stable Isotope in the Atmosphere and Biosphere exchange*).

October 2004: CARBOEUROPE e COST Action 627 joint international workshop on: *Partitioning soil CO2 efflux*, Capri Italy (Organizer, Scientific committee board Leader)

June 2003: Workshop of the EU project: "Forest Carbon-Nitrogen Trajectories" (Organizer).

2000: Exhibition on "Biodiversity", Fondazione IDIS, Città della Scienza, Napoli (Scientific advisor)

2000-05 Working Group 1: Plant, Soil and Soil Organisms, COST Action 627: Carbon Storage in European Grasslands, meetings, Dublin (Ireland), Ghent (Belgium), Florence and Capri (Italy), Scientific Committee Leader and Organizer.

September 1998: Global Change in Terrestrial Ecosystems (GCTE)- COST Action 619, joint workshop on: Litter Quality and Decomposition under Elevated Atmospheric CO₂, Capri, Italy (Local organizer, Scientific committee member)

September 1996: VII National meeting of the S.It.E, Naples, Italy (Organiser committee member)

Media products

RAI-educational, Guest in the EXPLORA programs on "Millennium Ecosystem Assessment" and "Natural Forests vs Forest Plantations"

RAI-Utile, Guest in the discussion programs on "Environmental Science in the education and public awareness" and "The state of frontier-edge international scientific research in Italy"

North Forty News, March 12, 2012, Cited in "Turmoil over soil: A climate-warming wildcard"

North Forty News, February 7, 2013, Cited in "CSU researchers study black carbon to learn environmental impact of wildfire" - <http://www.northfortynews.com/csu-researchers-study-black-carbon-to-learn-environmental-impact-of-wildfires/>

InnovationNews, February 8, 2013, Cited in "CSU researchers get\$200k to study environmental impact of wildfire black carbon"- <http://innovationnews.com/innovation-news-releases/csu-researchers-get-200k-to-study-black-carbons-environmental-impact/>

You tube video, <https://www.youtube.com/watch?v=HahDjm9H0eY&feature=youtu.be>

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

American Geophysical Union
 American Ecological Society
 Soil Ecology Society
 Soil Science Society of America
 Italian Ecological Society_ S.It.E. (Steering committee member from 2005 to 2008)
 British Ecological Society (1994- 2005)

AWARDS:

2013: OECD Co-operative Research Program Fellow (\$11,000)
 2011 to date: Donor award to the "Cotrufo-Hoppess fund for soil ecology research" (\$180,000)
 2011 to date: Donor award to the "Cotrufo-Hoppess equipment fund for isotopic analyses" (\$1000)
 2010: NREL Outstanding Advisor
 1998: Smithsonian Institution Research Fellow.
 1996: EU COST Action 619 Research Fellow.
 1995: European Environmental Research Organization Research Fellow.
 1995: Wolf Vishniac Award for Excellence, XII International Symposium on Environmental

Biogeochemistry, Rio de Janeiro, Brazil
1994-95: British Council Research Fellow.

OUTREACH ACTIVITIES:

- 2016: Presentation to the Bolder County, entitled: "A possible climate-smart solution to organic waste: Biochar". April 12th, 2016.
- 2015-2016: Development of the "Enrichment Science Program" for Bennett Elementary, Fort Collins.
- 2014: Lecturer in the Webinar for science teachers: "Biochar for a sustainable future: from the global to the molecular scale", https://www.youtube.com/watch?v=s-jf5T_LH78
- 2013: Invited Speaker in the event: "Extending Carbon and Water: Taking it to the Next Level", for K-12 teachers. CSU, February 23rd, 2013
- 2013: Invited Speaker at the Conference of the Colorado Science Education Network: "Earth, Water, and Fire: Engaging Students in Colorado Issues". CSU, February 13th, 2013
- 2012: Proposer and Panellist for the "The Biochar Solution, Facts vs. Fiction". SoGES Managing the Planet panel series event. Fort Collins, November 14th, 2012.
- 2012: Lecturer in the "Carbon Station Day": An hands-on research experience for science students at Fossil Ridge High School.
- 2012-2013: Research Experience for Teacher (RET) Advisor of Ms. Kathleen E. Guilbert, a 5th grader science teacher at Bella Romero Elementary (92% minority/low-income population) for the design and delivery of an hands-on research experience on decomposition. This work resulted in Ms Guilbert's presentation at the AGU and her students presentation at the FRSES.
- 2011: Lecturer for the Colorado Council for Economic Education, of the course entitled: "the Energy Policies Toward a Better World – the US and EU", for high-school teachers.
- 2011-2012: RET Advisor of Mrs Laura Grissom, a science teacher at the Fossil Ridge High School
- 2011: Invited Speaker for the "Ground-up 3" event, Poudre Learning Centre, June 7th, 2011
- 2010-2011: RET Advisor of Ms Jessie Kneisler, an environmental science teacher at a Sherwood High School in Sherwood Oregon.

PUBLICATIONS:

To date (April 20th, 2016) received a total of 5110 citations; h index = 35; i10-index = 58 (google scholar)

International Refereed Journals:

- 1) Cotrufo M.F., Boot C., Abiven, S., Foster E.J., Haddix M.L., Peisser M., Wurster C.M., Bird M.I., Schmidt M.W.I. (in press) Toward an accurate quantification of pyrogenic carbon in the environment: An integration of analytical approaches. *Organic Geochemistry*.
- 2) Mitchell, E., Scheer, C., Rowlings, D., Conant, R.T., Grace, P., Cotrufo, M.F., Van Delden, L., (2016) The influence of agricultural management strategies on GHG fluxes and stable SOM formation in a sandy soil. *Soil Biology and Biochemistry*.101:104-113
- 3) Campbell, E.E., Parton, W.J., Soong, J.L., Paustian, K., Hobbs, N.T., **Cotrufo, M.F.** (2016). Tracking the fate of litter carbon using the Litter Decomposition and Leaching (LIDEL) model. *Soil, Biology and Biochemistry*, 100:160-174.
- 4) Soong J., Dam M., Wall D.H., **Cotrufo M. F.**(2016) Fire in the tallgrass prairie: belowground biological responses to pyrogenic organic matter inputs and fire history. *Journal of Functional Ecology*, in press
- 5) Jiang X., Haddix M.L., **Cotrufo M.F.** (2016) Interactions between biochar and soil organic carbon decomposition: Effects of nitrogen and low molecular weight carbon compound addition. *Soil Biology and Biochemistry*, 100:92-101.
- 6) McKee G., Soong J.L., Calderon F., Borch T., **Cotrufo M.F.** (2016) An integrated spectroscopic and wet chemical approach to investigate grass litter decomposition chemistry. *Biogeochemistry*, 128:107-123
- 7) Shaw, E.A., K Denef, CM de Tomasel, MF Cotrufo, DH Wall (2016) Burning Management in the

- tallgrass prairie affects root decomposition, soil food web structure and carbon flow. *SOIL*, 2, 199-210.
- 8) Andrés, P., Moore J.C., Simpson R.T., Selby G., **Cotrufo, M.F.**, Deneff K., Haddix M.L., Shaw E.A., de Tomasel C.M., Molowny R., Wall D.H., (2016) Soil food web stability in response to grazing in a semi-arid prairie: the importance of soil heterogeneity. *Soil Biology and Biochemistry*, 97:131-143
 - 9) Bingham D. & **Cotrufo, M.F.** (2016). Organic nitrogen storage in mineral soil: implication for policy and management. *Science of the Total Environment*, 551-552:116-126
 - 10) Haddix M.H., Paul E., **Cotrufo M.F.** (2016) Dual, differential isotope labeling shows the preferential movement of labile plant carbon into mineral-bonded soil organic matter. *Global Change Biology*, 22, 2301–2312
 - 11) Soong J., Vandegehuchte M.L., Horton A.J., Nielsen U.N., Deneff K, Shaw E. A., Milano de Tomasel C., Parton W., Wall D.H., **Cotrufo M. F.** (2016) Soil microarthropods support ecosystem productivity and soil C accrual: evidence from a litter decomposition study in the tallgrass prairie. *Soil Biology and Biochemistry*, 92:230-238
 - 12) **Cotrufo M.F.**, Soong J.L., Horton A.J., Campbell E.E., Haddix M.H., Wall D.L., Parton W.J. (2015) Soil organic matter formation from biochemical and physical pathways of litter mass loss. *Nature Geosciences*, doi:10.1038/ngeo2520.
 - 13) Jang X., Deneff K., Stewart, C.E., **Cotrufo M.F.** (2015) Controls and dynamics of biochar decomposition and soil microbial abundance, composition, and carbon use efficiency during long-term biochar-amended soil incubations. *Biology & Fertility of Soils*, DOI 10.1007/s00374-015-1047-7
 - 14) Smith P., House J. I., Bustamante M., Sobocka J., Harper R., Pan G., West P., Clark J., Adhya T., Rumpel C., Paustian K., Kuikman P., **Cotrufo M.F.**, Elliott J. A., McDowell R., Griffiths R.I., Asakawa S., Bondeau A., Jain A. K., Meersmans J., Pugh T.A.M. (2015). Global Change Pressures on Soils from Land Use and Management. *Global Change Biology*, DOI: 10.1111/gcb.13068.
 - 15) Smith, P., **M. F. Cotrufo**, C. Rumpel, K. Paustian, P. J. Kuikman, J. A. Elliott, R. McDowell, R. I. Griffiths, S. Asakawa, M. Bustamante, J. I. House, J. Sobocká, R. Harper, G. Pan, P. C. West, J. S. Gerber, J. M. Clark, T. Adhya, R. J. Scholes, and M. C. Scholes (2015) Biogeochemical cycles and biodiversity as key drivers of ecosystem services provided by soils. *SOIL*, 1, 665–685, 2015
 - 16) Martinez C, Alberti G, **Cotrufo MF**, Magnani F, Zanutelli D, Gianelle D, Camin F, Cescatti A Rodeghiero M (2015). Belowground carbon allocation patterns as determined by the in-growth soil core ¹³C technique across different ecosystem types. *Geoderma*, 263:140-150
 - 17) Soong JL, Parton W, Calderon FJ, Campbell EE, **Cotrufo MF** (2015) A new conceptual model on the fate and controls of fresh and pyrolyzed plant litter decomposition. *Biogeochemistry*, DOI: 10.1007/s10533-015-0079-2
 - 18) Soong JL, **Cotrufo MF** (2015) Annual burning of a tallgrass prairie inhibits C and N cycling in soil, increasing recalcitrant pyrogenic organic matter storage while reducing N availability. *Global Change Biology*, 21: 2321-2333.
 - 19) Boot C, Haddix M, Paustian K, **Cotrufo MF** (2015). Distribution of black carbon in Ponderosa pine litter and soils following the High park wildfire. *Biogeosciences* 12, 3029–3039
 - 20) Soong J. L., Calderon F.J., Betzen J. & **Cotrufo M.F.** (2014) Quantifying and FTIR characterizing dissolved organic carbon and total dissolved nitrogen leaching from litter: a comparison of methods across litter types. *Plant and Soil*. 385:125-137
 - 21) Alberti, G., S. Vicca, I. Inghima, L. Beilelli-Marchesini, L. Genesio, F. Miglietta, H. Marjanovic, C. Martinez, G. Matteucci, D'Andrea E, A. Peressotti, F. Petrella, M. Rodeghiero, **M. F. Cotrufo** (2014) Soil C:N stoichiometry controls carbon sink partitioning between above-ground tree biomass and soil organic matter in high fertility forests. *iForest*: doi: 10.3832/ifor1196-008.
 - 22) Jandl R., Rodeghiero M., Martinez C., **Cotrufo M.F.**, Bampa F., van Wesemael B., Harrison R.B., Guerrini I.A., deB Richter Jr. D., Rustad L., Lorenz K., Chabbi A., Miglietta F. (2014) Current status, uncertainty and future needs in soil organic carbon monitoring. *Journal of the Total Environment*, 468–469, 376-383.
 - 23) **Cotrufo M. F.**, Soong J., Vandegehuchte M.L., Nguyen T., Deneff K, Shaw E. A., Sylvain Z.A., Milano de Tomasel C., Nielsen U.N., Wall D.H. (2014) Naphthalene addition to soil surfaces: an effective method to suppress soil micro-arthropods with negligible direct effects on soil C dynamics.

- Journal of Applied Soil Ecology*, 74:21-24
- 24) Gomez J. D., Deneff K., Stewart C. E., Zheng J. & **Cotrufo M. F.** (2014) Biochar addition rate influences soil microbial abundance and activity in temperate soils. *European Journal of Soil Science*. 65: 28-39.
 - 25) Soong J., Reuss D., Pinney C., Boyack T, Haddix M., Stewart C.E. & **Cotrufo M.F.** (2014) Design and operation of a continuous ¹³C and ¹⁵N labeling chamber for uniform or differential, metabolic and structural, plant tissue isotope labeling. *Journal of Visualized Experiments*, 83 | e51117 | Page 1 of 9 <http://www.jove.com/video/51117/design-operation-continuous-13c-15n-labeling-chamber-for-uniform-or?access=FP74RB74>
 - 26) Deneff K., Del Galdo I., Venturi A. & **Cotrufo M.F.** (2013) Soil carbon and nitrogen stocks and distribution across organic matter fractions in European soils under different land use. *Open Journal of Soil Science*. 3: 297-313.
 - 27) **Cotrufo M.F.**, Wallenstein M.D., Boot C., Deneff K., Paul E., (2013) The Microbial Efficiency-Matrix Stabilization (MEMS) framework integrates plant litter decomposition with soil organic matter stabilization: Do labile plant inputs form stable soil organic matter? *Opinion. Global Change Biology* 19:988-995.
 - 28) Field J.L., Keske C.M., Birch G., DeFoort M.W., **Cotrufo M.F.** (2013) Distributed biochar and bioenergy coproduction: a regionally specific case study of environmental benefits and economic impacts. *Global Change Biology, Bioenergy*. 5: 177-191
 - 29) Battipaglia G., Saurer M., Cherubini P., Calfapietra C., McCarthy H.R., Norby R.J., **Cotrufo M.F.**, (2013) Elevated CO₂ increases tree-level intrinsic water use efficiency: insights from carbon and oxygen, *New Phytologist*, 197:544-554.
 - 30) Stewart, C.E., Zheng, J., Botte, J., **Cotrufo, M.F.** (2013). Biochar co-generated by fast pyrolysis for bio-oil production is a valuable tool to mitigate green-house gas emissions and increase carbon sequestration in temperate soils. *Global Change Biology Bioenergy*, 5: 153-164.
 - 31) Zheng, J., Stewart, C.E., **Cotrufo, M.F.** (2012) Biochar and N fertilizer alters soil N dynamics and greenhouse gas fluxes from two temperate soils. *Journal of Environmental Quality*, 41:1361-1370.
 - 32) **Cotrufo M. F.**, Alberti G., Inglema I., Marjanović H., LeCain D., Zaldei A., Peressotti A. and Miglietta F. (2011) Decreased summer drought affects plant productivity and soil carbon dynamics in a Mediterranean woodland. *Biogeosciences* 8:1-11.
 - 33) **Cotrufo M. F.**, Conant R.T, Paustian H.E. (2011) Soil Organic Matter Dynamics: Land Use, Management and Climate Change. *Plant and Soil*, 338: 1-3.
 - 34) **Cotrufo M. F.**, Ngao J., Marzaioli F. Piermatteo D. (2010) Inter-comparison of methods for quantifying leaf litter decomposition rates. *Plant and Soil*, 334:365-376
 - 35) Rubino, M., Bertolini, T. De Angelis, P. D'Onofrio, A. Dungait, J.A.J. Evershed, R.P. Lagomarsino, A. Lubritto, C. Merola, A. Terrasi, F., **Cotrufo M.F.** (2010) Carbon input belowground is the major C flux contributing to leaf litter mass loss: evidences from a ¹³C labelled-leaf litter experiment. *Soil Biology and Biochemistry*, 42:1009-1016.
 - 36) Battipaglia G., Marzaioli F., Lubritto C., Altieri S., Strumia S., Cherubini P., **Cotrufo M.F.** (2010) Traffic pollution affects tree-ring width and isotopic composition of *Pinus pinea*. *Science of the Total Environment*. 408:586-593
 - 37) Marzaioli F., Lubritto C., Del Galdo I., D'Onofrio A., **Cotrufo M. F.**, Terrasi F. (2010) Comparison of different soil organic matter fractionation methodologies: Evidences from ultrasensitive ¹⁴C measurements. *Nuclear Instruments and Methods in Physics Research B*. 7:1062-1066.
 - 38) Castaldi S, Canfora A, Fiorentino A, Natale A, Messere A, Miglietta F, **Cotrufo M.F.** (2009) Inhibition of nitrification activity in a Mediterranean woodland: possible role of chemicals produced by *Arbutus unedo*. *Plant and Soil*, 315:273-283.
 - 39) Battipaglia G., Saurer M., Cherubini P., Siegwolf R.T.W., **Cotrufo M. F.** (2009) Tree rings indicate different drought resistance of a native (*Abies alba* Mill.) and a nonnative (*Picea abies* (L.) Karst.) species co-occurring at a dry site in Southern Italy. *Forest Ecology and Management* 257:820-828
 - 40) Inglema I., Alberti G., Bertolini T., Vaccari F.P., Gioli B., Miglietta F., **Cotrufo M.F.**, Peressotti A (2009) Precipitation pulses enhance respiration of Mediterranean ecosystems: the balance between organic and inorganic components of increased soil CO₂ efflux, *Global Change Biology*, 15:1289-1301

- 41) Rubino M., Lubritto C., D'Onofrio A., Terrasi F., Kramer C., Gleixner G., **Cotrufo M.F.** (2009) Isotopic evidences for microbiologically mediated and direct C input to soil compounds from three different leaf litters during their decomposition. *Environmental Chemistry Letter*, 7:85-95
- 42) Lukac M, Lagomarsino A, Moscatelli MA, De Angelis P, **Cotrufo MF** and Godbold DL (2008) Forest soil C storage under elevated CO₂ – a case of increased throughput? *Forestry*, doi:10.1093/forestry/cpn041
- 43) Battipaglia G, Jäggi M, Saurer M, Siegwolf R.T.W., **Cotrufo M. F.** (2008) Climatic sensitivity of δ¹⁸O in the wood and cellulose of tree rings: Results from a mixed stand of *Acer pseudoplatanus* L. and *Fagus sylvatica* L. *Palaeo*, 261:193-202.
- 44) Sutton M.A., E. Nemitz, J.W. Erisman, C. Beier, K. Butterbach Bahl, P. Cellier, W. de Vries, **F. Cotrufo**, U. Skiba, C. Di Marco, S. Jones, P. Laville, J.F. Soussana, B. Loubet, M. Twigg, D. Famulari, J. Whitehead, M.W. Gallagher, A. Neftel, C.R. Flechard, B. Herrmann, P.L. Calanca, J.K. Schjoerring, U. Daemmgen, L. Horvath, Y.S. Tang, B.A. Emmett, A. Tietema, J. Peñuelas, M. Kesik, N. Brüeggemann, K. Pilegaard, T. Vesala, C.L. Campbell, J.E. Olesen, U. Dragosits, M.R. Theobald, P. Levy, D.C. Mobbs, R. Milne, N. Viovy, N. Vuichard, J.U. Smith, P. Smith, P. Bergamaschi, D. Fowler, S. Reis (2007) Challenges in quantifying biosphere-atmosphere exchange of nitrogen species. *Environmental Pollution*: 150, 125-139
- 45) Rubino M., Lubritto C., D'Onofrio A., Terrasi F., Gleixner G., **Cotrufo M.F.** (2007) An isotopic method for testing the influence of leaf litter quality of C fluxes during decomposition. *Oecologia*, 154: 155-166
- 46) Battipaglia G, Cherubini P, Saurer M, Siegwolf R.T.W., Strumia S., **Cotrufo M. F.** (2007) Volcanic explosive eruptions of the Vesuvio decrease tree-ring growth but not photosynthesis rates in the surrounding forests *Global Change Biology*: 13, 1122-1137
- 47) Calfapietra C., De Angelis P., Gielen B., Lukac M, Moscatelli M.C., Avino G., Lagomarsino A., Polla A., Ceulemans R., Scarascia-Mugnozza G., Hoosbeek M.R., **Cotrufo M.F.** (2007) Nitrogen use efficiency of a short-rotation poplar plantation is increased under elevated CO₂. *Tree Physiology*
- 48) Riitta Hyvönen., Göran I. Ågren, Sune Linder, Tryggve Persson, **M. Francesca Cotrufo**, Alf Ekblad, Michael Freeman, Achim Grelle, Ivan A. Janssens, Paul G. Jarvis, Seppo Kellomäki, Anders Lindroth, Denis Loustau, Tomas Lundmark, Richard J. Norby, Ram Oren, Kim Pilegaard, Michael G. Ryan, Bjarni D. Sigurdsson, Monika Strömberg, Marcel van Oijen and Göran Wallin (2007) The likely impact of elevated [CO₂], nitrogen deposition, increased temperature, and management on carbon sequestration in temperate and boreal forest ecosystems. A literature review. *The New Phytologist - Tansley Review*: 173, 463-480
- 49) Del Galdo I, WC Oechel and **MF Cotrufo** (2006) Past, present and future atmospheric CO₂ concentrations effects on soil organic matter dynamics in a chaparral ecosystem. *Soil Biology Biochemistry*, 38: 3235-3244
- 50) Subke J.A., Inglima I, **Cotrufo M. F.** (2006) Trends and methodological impacts in soil CO₂ efflux partitioning: a meta-analytical review. *Global Change Biology*. 12: 921-943
- 51) Bertolini T, I. Inglima, M. Rubino, F. Marzaioli, C. Lubritto, J.A. Subke, A. Peressotti, **M.F. Cotrufo** (2006) Sampling soil derived CO₂ at ambient CO₂ concentration for analysis of isotopic composition. *Isotopes in Environmental and Health Studies*: 42:57-65.
- 52) **Cotrufo MF** (2006) Quantity of standing litter: a driving factor of root dynamics. *Plant and Soil*. 281:1-3
- 53) Godbold DL, M.R. Hoosbeek, M.Lukac, **M.F. Cotrufo**, I. A. Janssens, R.Ceulemans, A. Polle, E.J. Velthorst, G. Scarascia-Mugnozza, P. De Angelis, F. Miglietta, A. Peressotti (2006) Mycorrhizal hyphal turnover is the dominant carbon input to soil. *Plant and Soil*, 281:15-24.
- 54) Marzaioli F., Lubritto C., Battipaglia G., Passariello I., Rubino M., Rogalla D., Strumia S., Miglietta F., D'Onofrio A., **Cotrufo M.F.**, Terrasi F.(2005) Reconstruction of past CO₂ concentration in a natural enriched site using radiocarbon dating. *Radiocarbon*, 47:257-263
- 55) Gielen B, C Calfapietra, M Lukac, VE Wittig, P De Angelis, IA Janssens, MC Moscatelli, S Grego, **MF Cotrufo**, DL Godbold, MR Hoosbeek, SP Long, F Miglietta, A Polle, CJ Bernacchi, PA Davey, R Ceulemans, GE Scarascia-Mugnozza (2005) Net carbon storage in a poplar plantation (POPFACE) after three years of free-air CO₂ enrichment. *Tree Physiology*. 25:1399-1408
- 56) **Cotrufo M.F.**, Drake B., Ehleringer JE (2005) Palatability trials on hardwood leaf litter grown under elevated CO₂: a stable carbon isotope study. *Soil, Biology & Biochemistry* 37:1105-1112

- 57) **Cotrufo M.F.**, De Angelis P. and Polle A. (2005) Leaf litter production and decomposition in a poplar short rotation coppice exposed to free air CO₂ enrichment (POPFACE). *Global Change Biology* 11: 1-12
- 58) Subke JA, Hahn V, Battipaglia G, Linder S, Buchmann N, **Cotrufo MF** (2004) Feed-back interactions between needle litter decomposition and rhizosphere activity. *Oecologia*, 139:551-559
- 59) Subke JA, Inghima I, Peressotti A, Delle Vedove G, **Cotrufo MF** (2004) A new technique to measure soil CO₂ efflux at constant CO₂ concentration *Soil Biology & Biochemistry*, 36:1013-1015
- 60) Hoosbeek M., Lukac M, van Dam D, Godbold DL, Velthorst EJ, Biondi FA, Peressotti A, **Cotrufo M.F.**, De Andelis P., Scarascia-Mugnozza G. (2004) More new carbon in the mineral soil of a poplar plantation under Free Air Carbon Enrichment: Cause of increased priming effect? *Global Biogeochemical Cycle*, 18, GB1040 (1-7).
- 61) Gianfrani L., Rocco A., G. Battipaglia, A. Castrillo, G. Gagliardi, A. Peressotti, **M.F. Cotrufo**, and (2004) Assessing soil respiration by means of near-infrared diode laser spectroscopy. *Applied spectroscopy*, 58 (9):1051-1056.
- 62) **Cotrufo MF**, Delle Vedove G., Subke JA, Inghima I, Alberti G, Peressotti A (2004) Litter decomposition and soil CO₂ efflux on the Mediterranean island of Pianosa. *Journal of Mediterranean Ecology* 5: 23-29
- 63) Baraldi R., Vaccari F.P., Colom R.P. **Cotrufo M.F.**, D'Acqui L.P (2004). The Pianosa-Lab project: an integrated research project to measure the carbon balance of the Pianosa island. *Journal of Mediterranean Ecology* 5: 5-13
- 64) Del Galdo I., Six J., Peressotti A., **Cotrufo MF** (2003) Assessing the impact of land use change on soil C sequestration in agricultural soils by means of organic matter fractionation and stable C isotopes. *Global Change Biology*, 9:1204-1213
- 65) Calabritto F., Del Galdo I., De Angelis P., Ball A. S., Coppola E., Strumia S., **Cotrufo M. F.** (2002) Long-term responses to elevated CO₂ of the soil environment in a Mediterranean Macchia ecosystem. *Journal of Mediterranean Ecology*. 3:23-27
- 66) Sabbarese C., Stellato L., **Cotrufo M.F.**, D'Onofrio A., Ermice A., Terrasi F., Alfieri S.. (2002). Transfer of ¹³⁷Cs and ⁶⁰Co from irrigation water to a soil-tomato plant system. *Journal of Environmental Radioactivity*, 61:21-31
- 67) Sabbarese C., Stellato L., **Cotrufo M.F.**, D'Onofrio A., Ermice A., Lubritto C., Terrasi F., Alfieri S., Migliore G. (2002). Dependence of radionuclide transfer factor on plant growth stage. *Environmental Modelling and Software*, 17:545-551
- 68) Norby R.J., **Cotrufo M. F.**, Ineson P, O'Neill E.G. Canadell J.G. (2001) Elevated CO₂, litter quality and decomposition: A synthesis. *Oecologia*. 127: 153-165
- 69) Restieri R., Gagliardi G, De Biasio G., **Cotrufo M.F.**, Gianfrani L (2001) High precision measurements of CO₂ concentration in air by means of diode-laser absorption spectroscopy near 2 μm. In: *Water, Ground and Air Pollution Monitoring and Remediation*. Eds T. Vo-Dinh, R.L. Spellicy. Proc. SPIE Vol.4199:124-129.
- 70) Gagliardi G., Restieri R., De Biasio G., De Natale P., **Cotrufo M.F.**, and Gianfrani L. (2001) Quantitative diode laser absorption spectroscopy near 2 μm with high precision measurements of CO₂ concentration. *Review of Scientific Instruments*, **72**: 4228-4233
- 71) **Cotrufo M.F.** and Ineson I. (2000) Does elevated CO₂ affect wood decomposition? *Plant and Soil*. 224:51-57.
- 72) Gorissen A. and **Cotrufo M.F.** (2000) Decomposition of leaf and root tissue of three perennial grass species grown at two levels of atmospheric CO₂ and N supply. *Plant and Soil*. 224: 75-84.
- 73) **Cotrufo M.F.**, Raschi A., Lanini M. and Ineson P. (1999) Decomposition and nutrient dynamics of *Quercus pubescens* leaf litter in a naturally enriched CO₂ Mediterranean ecosystem. *Functional Ecology*, 13: 343-351.
- 74) Gorissen A. and **Cotrufo M.F.** (1999) Elevated CO₂ and nitrogen dynamics in grasses with emphasis on rhizosphere processes. *Soil Science Society of America Journal*. 63:1695-1702
- 75) **Cotrufo M.F.** , Ineson P., Scott A (1998) Elevated CO₂ reduces the nitrogen concentration of plant tissues. *Global Change Biology*, 4:43-54
- 76) **Cotrufo M.F.**, Briones M.J.I. and Ineson P. (1998) Elevated CO₂ affects field decomposition rate and palatability of tree leaf litter: importance of changes in substrate quality. *Soil Biology & Biochemistry*, 30:1565-1571
- 77) **Cotrufo M.F.**, Berg B. and Kratz. W (1998) Increased atmospheric CO₂ and litter quality. *Environmental Reviews*, 6:1-12
- 78) Norby R. and **Cotrufo M.F.** (1998) Global Change: A question of litter quality. *Nature* 396:17-18

- 79) **Cotrufo M.F.** and Gorissen A. (1997) Elevated CO₂ enhances below-ground C allocation in three perennial grass species at different levels N availability. *The New Phytologist*, 137:421-431.
- 80) **Cotrufo M.F.** and Ineson P. (1996) Elevated CO₂ reduces field decomposition rates of *Betula pendula* Roth. leaf litter. *Oecologia*, 106 :525-530.
- 81) Ineson P., **Cotrufo M.F.**, Bol R., Harkness D.D and Blum H. (1996) Quantification of soil C input under elevated CO₂: C₃ plants in a C₄ soil. *Plant and Soil* , 187 :345-350.
- 82) **Cotrufo M.F.** and Ineson P. (1995). Effects of enriched atmospheric CO₂ and nutrient status on the decomposition of fine roots of *Betula pendula* Roth. and *Picea sitchensis* (Bong.) Carr. *Plant and Soil*,170:267-277.
- 83) **Cotrufo M.F.**, Virzo De Santo A., Alfani A., Bartoli G. and De Cristoforo A. (1995). Effects of urban heavy metal pollution on organic matter decomposition in *Quercus ilex* woods. *Environmental Pollution*, 89:81-87.
- 84) **Cotrufo M.F.**, Ineson P. and Roberts J.D. (1995). Decomposition of birch leaf litters with varying C-to-N ratios. *Soil Biology and Biochemistry*, 27:1219-1221
- 85) **Cotrufo M.F.**, Ineson P. and Rowland A.P. (1994). Decomposition of tree leaf litters grown under elevated CO₂: effect of litter quality. *Plant and Soil*. 163:121-130.

Book chapters, proceedings and extension articles:

- Cotrufo M.F.** & Kuikman, P. 2015. Chapter.2.2: Soils and the Nutrient Cycle. In: *Status of the World's Soil Resource Report*. Intergovernmental Technical Panel on Soils. Pp, 39-42. FAO, Rome.
- Ramlow, M., Keske, C.M.H., & **Cotrufo, M.F.** 2015 Biochar in Colorado. Colorado State University Agricultural Extension Bulletin – Fact Sheet No. 0.509
- Cotrufo M.F.** (2014) Global Change and Terrestrial Ecosystems, Introduction. In: Freedman B. (Ed.) *Global Environmental Change*. Springer-Verlag Berlin Heidelberg, pp291-296
- Keske, C.M.H, Lohman Birch, G. and **Cotrufo, M.F.** 2012. Biochar in Colorado. Colorado State University Agricultural Extension Bulletin 2012-0309.
- Cotrufo MF**, Del Galdo I, Piermatteo D (2009) *Litter decomposition: concepts, methods and future perspectives* In: *Integrated Methodology on soil carbon flux measurements*" (Eds. W. Krutz, M. Bahn, A. Heinemeyr) Cambridge University Press, Cambridge UK. Pp 76-90.
- Scarascia-Mugnozza G., Calfapietra C., Ceulemans R., Gielen B., **Cotrufo M.F.**, DeAngelis P., Godbold D., Hoosbeek M.R., Kull O., Lukac M., Marek M., Miglietta F., Polle A., Raines C., Sabatti M., Anselmi N., Taylor G. (2006) *Responses to elevated CO₂ of a short rotation, multispecies poplar plantation*. In: *Managed Ecosystems and CO₂: Case Studies, Processes and Perspectives* (Ed. S.Long, G. Hendrey, R. Norby, M. Stitt, H.Blum, J. Noesberger). Series of Ecological Studies, Springer- Verlag, Berlin.Vol. 187
- Vaccari FP, Miglietta F, Rossi F, Zerbi G, Peressotti A, **Cotrufo MF**, Georgiadis T, Magliulo V (2004) Pianosa-Lab: a research and monitoring project in a Mediterranean ecosystem. *Global Challenges of Parks and Protected Area Management*. Proceedings of the 9th ISSRM. Eds Camarda I, Manfredo MJ, Mulas F & Teel TL. Carlo Delfino, Sassari, Italy
- Cotrufo M.F.** , Miller M. and Zeller B. (2000) Litter decomposition. In: *Carbon and Nitrogen Cycling in European Forest Ecosystems*. Ed. E. D. Schulze. pp. 276-296. Series in Ecology Book Vol. 142, Springer-Verlag, Berlino.
- Ineson P., **Cotrufo M.F.** (1996) Increasing concentrations of atmospheric CO₂ and decomposition processes in forest ecosystems. In: *Plant Responses to Elevated CO₂: Evidence from Natural Springs*. Eds. A. Raschi, F. Miglietta, R. Tognetti and P.R. Van Gardingen. Cambridge University Press, Cambridge. Pp. 242-267.

Editor:

“*Global Change and Terrestrial Ecosystems*” section In: Freedman B. (Ed.) *Global Environmental Change*: SpringerReference (www.springerreference.com). Springer-Verlag Berlin Heidelberg, 0. DOI: 10.1007/SpringerReference

Plant and Soil, Vol.338 Special Issue on “SOM dynamics: Land Use, Management and Global Change”

Global Change Biology Vol. 12 Thematic session on “Soil CO₂ efflux partitioning”

Plant and Soil. Vol. 224, Special Issue on: “Litter quality and decomposition under elevated atmospheric CO₂”.

Encyclopedias:

Enciclopedia della Scienza, Rizzoli New Media, author of contribution on: “La Biosfera ed i cicli degli elementi (The Biosphere and the biogeochemical cycles”.

Enciclopedia del XXI secolo, Istituto dell'Enciclopedia Italiana Treccani, author of contribution on “Biosfera”

Encyclopedia of Life Support Systems, EOLSS Publishers Co Ltd, for UNESCO, author of contribution on: “What is Global Change?”

Italian journals & Book chapters:

Cotrufo M.F. e Ineson P. (1992). Aumento dell'anidride carbonica nell'aria: qualità della lettiera e decomposizione. In *Ecologia*. Eds. R. Marchetti and M. Cotta Ramusino. S.It.E., Milano. Pp. 701-703.

F.A. Rutigliano, Alfani A., Bartoli G., Fierro A.R., Castaldi S, **Cotrufo M.F.**, Virzo De Santo A. (1993). Carico di metalli pesanti e attività enzimatica in suoli dell'area urbana di Napoli. *Annali Facoltà di Agraria Università di Sassari*. 35 :451-460

Cotrufo M.F. (1994) Emissioni naturali di CO₂: effetti sulla qualità e sulla decomposizione di lettiera di *Quercus pubescens* Milld. In: *Emissioni naturali, scambi di gas e interazioni chimico-fisiche in ecosistemi terrestri della regione mediterranea*. Eds. A. Alfani, V. Cuomo, M. Macchiato, A. Virzo D Santo. Pp.45-46.

Cotrufo M.F. (1996) Il sistema suolo: effetto dei cambiamenti climatici e processi di feed-back. *Atti S.It.E. XVII*. :53-58.

Stellato L., Sabbarese C., **Cotrufo M.F.**, D'Onofrio A., Ermice A., Terrasi F., Alfieri S. (1999) Trasferimento di radionuclidi dall'acqua d'irrigazione al sistema suolo-pianta in una coltura di pomodori. S.It.E. Atti. 20: 59-69.

Cotrufo M.F.(2001) Decomposizione della lettiera. In: *Il Progetto PianosaLab. Ricerche sugli ecosistemi dell'area mediterranea*. Eds. FP Vaccari, F Miglietta, G Zerbi. Pp. 107-111. Forum, Udine. ISBN 88-8420-059-8.

Cotrufo M.F., Peressotti A. (2002) Incremento della concentrazione atmosferica di CO₂: “biosink” di carbonio e politiche di mitigazione. S.It.E. *Lettera ai Soci*, N°6: 6-10

Battipaglia G., Strumia S., **Cotrufo M.F.** (2002) Monitoraggio della Biodiversità e dello stato del suolo di un sistema costiero mediterraneo. S.It.E. Atti, 25: 75-96.

Cotrufo M.F., Anniciello M., De Angelis P. (2002) Decomposizione della lettiera di foglie di pioppo in un “mondo ad elevata CO₂”: uno studio nell'ambito del progetto europeo POPFACE. S.I.S.E.F. Atti.

Cotrufo M.F. (2003) Carbon sequestration in soils under global environmental change. *Proceedings of the First Italian IGBP Conference: “Mediterraneo e Italia nel Cambiamento Globale: un ponte tra scienza e società”*. Eds. Miglietta F. Valentini R. pp: 11-15.

Del Galdo I, Squaglia A, **Cotrufo MF** (2003) Carbon sequestration in afforested soils under elevated atmospheric CO₂ concentrations: preliminary results. *Proceedings of the First Italian IGBP Conference: “Mediterraneo e Italia nel Cambiamento Globale: un ponte tra scienza e società”*. Eds. Miglietta F. e Valentini R. pp. 29-32.

Battipaglia G, D'Ambrosio B, Strumia S, **Cotrufo MF** (2003) Tree rings stable C isotopes as indicators of climatic change in the Mediterranean basin. *Proceedings of the First Italian IGBP Conference: “Mediterraneo e Italia nel Cambiamento Globale: un ponte tra scienza e società”*. Eds. Miglietta F. Valentini R. pp. 147-150

Scartazza A, Lauteri M, Bertolini T, Di Tommasi P, Spaccino L, Colom RM, Peressotti A, **Cotrufo MF**, Vaccari F, Maglietta F, Brugnoli E (2003) Isotopic approach to study atmosphere-biosphere exchanges in the Pianosa island ecosystems. *Proceedings of the First Italian IGBP Conference: “Mediterraneo e Italia nel Cambiamento Globale: un ponte tra scienza e società”*. Eds. Miglietta F. Valentini R. pp. 71-73.

Cotrufo M.F. (2003) Dottorato di Ricerca Internazionale: testimonianza di una magnifica esperienza. S.It.E. *Lettera ai Soci*, N°2, pp.

Colom R., Vaccari FP, Baraldi R, **Cotrufo MF**, D'Acqui L (2004) Struttura e funzionalità degli ecosistemi dell'isola di Pianosa. S.It.E. Atti 27. Aracne Editrice S.r.l. ISBN 88-7999-767-X

Alberti G, Inghima I, Arriga N, Piermatteo D, Pecchiari M, Zaldei A, Papale D, Peressotti A, Valentini R, **Cotrufo MF**, Miglietta F (2007). Cambiamenti nel regime pluviometrico in

ecosistemi mediterranei: il progetto MIND. *Forest@4* (4): 460-468. [online] URL: <http://www.sisef.it/forest@/>.

Invited presentations at scientific conferences:

- Cotrufo M.F.** (2015) Soil organic matter formation from litter decomposition: A call for modeling of both DOM and POM pathways. 5th International SOM Conference, Gottingen (D), September 2015.
- Cotrufo M.F.**, Fulton-Smith S., Haddix M., A.J. Horton, Soong J. (2014) *Recalcitrance: an inherent relative attribute of plant litter describing its potential decomposability*. AGU Fall meeting, San Francisco 15-19 December, 2014
- Cotrufo MF**, J.L. Soong, A.J. Horton, E.E. Campbell and W.J. Parton (2014) *Above-ground litter-derived C and N stabilization in SOM: the key role of dissolved organic matter leaching and litter fragmentation*. AGU Fall meeting, San Francisco 15-19 December, 2014
- Cotrufo M.F.** (2013) *From Litter decomposition to SOM Formation: What are we missing?* ASA-CSSA-SSSA annual meeting, Tampa 3-8 November, 2013.
- Cotrufo M.F.** *From Litter decomposition to soil organic matter formation: through the eyes of isotopes*. Front Range Isotope Day. Laramie, Wyoming. August 2012
- Cotrufo M.F.** *Advancing the understanding of plant-soil atmosphere C and N exchanges by stable isotope techniques*. Isotope Mass Spectrometry Meeting. Trento, Italy April 2012
- Cotrufo M.F.** *Detecting Changes in Soil Carbon*. G-Scan meeting. Florence, April 2011
- Cotrufo M.F.** *Above-ground litter decomposition experiments: moving beyond mass loss*. AGU Fall meeting, San Francisco 13-17 December, 2010
- Cotrufo M.F.** *Detecting Changes in soil C pools and dynamics by means of stable isotopes and SOM fractionation*. III CARBOEUROPE conference, Finland, November 2005
- Cotrufo M.F.** *Understanding and quantifying soil C dynamics: when experiments meet models*. ESF-COST627-SSSB Workshop on "Soil C Modelling", 10-13 April 2005 Aberdeen
- Cotrufo M.F.**, Bertolini T.; Inglema I.; Rubino M.; Marzaioli F.; Lubritto C.; Subke J.A.; Peressotti A. *Determination of $\delta^{13}C$ CO₂ efflux: are we measuring the real thing?* CARBOEUROPE-COST 627 Joint workshop on "Soil CO₂ efflux partitioning". 1-4 October 2004, Capri, Italy
- Cotrufo M.F.**: "Carbon isotope methodologies: a breakthrough in the study of soil C dynamics", SIRIS 2004, 6-8 October 2004, Wien, Austria
- Cotrufo M.F.** *Decomposition processes in soils of FACE ecosystems*, FACE 2004 Ascona, Switzerland
- Cotrufo M.F.** *Plant, soil and atmospheric interactions in a changing environment*. 46th IAVS Symposium: "Water resources and vegetation", 14-16 June 2003, Naples, Italy
- Cotrufo M.F.** *C-N interaction in litter decay*. Second CARBOEUROPE meeting, Budapest Hungary, 4-8 March 2002.
- Cotrufo M.F.**, Peressotti A, Del Galdo I., Six J., *Impact of land use on soil organic C stores and aggregation of soil organic matter fractions*, COST Action 627 meeting, Ghent, Belgium, 22-24 November, 2001.
- Cotrufo M.F.**: *Soils under elevated CO₂: what is going on below ground?* COST Action 619, Ballyvaughan, Ireland, 5-9 June 1997.
- Cotrufo M.F.** Gorissen A.: *Carbon allocation in plant/soil systems of three perennial grass species as affected by elevated CO₂ concentrations and N fertilization*. COST Action 619, Colchester, UK, 22-24 November 1996.
- Cotrufo M.F.**, Gorissen A: *Effects of elevated atmospheric CO₂ and N availability on C and N cycling in plant/soil systems*. COST Action 619, Clearmont-Ferrand, France, 23-25 November 1995.