Marco Di Marcello, BSc & ACMG Guide

Canadian and Italian Citizenship
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Overview

I am a professional Biologist and certified Guide, member of the Association of Canadian Mountain Guide, with over a decade of field exploration and research experience. I have robust experience in remote and challenging field work such as the Himalaya. Deep love for the mountains, oozed out early in my childhood and increased exponentially, brought me into sharing experiences with native population all over the world from the first nations in the Canadian Rockies to the high altitude Sherpa population in a remote valley in Himalaya. I have professional expertise in scientific data collection, technical report writing, field project management, as well as wet laboratory procedures. Currently, I am researching plant-animal mitochondrial physiology focused on animal and plant mitochondrial Oxygen kinetics studies, both in hypoxic and normoxic environment.

Field experience:

From logistics to sampling activities, over multiple experiences in high altitude environment in the past decade, I have successfully completed many field-research activities. Taking rigorous academic and scientific procedures into the field, I have the experience and competence to adapt these strategies in real time to be the most efficient in accomplishing project goals. I have conducted the following data collection in the field:

- high altitude soil-water sampling for macrofauna studies up to 4600 m asl - *University of L'Aquila-Italy*
- collected biospecimens and numerous dental impressions from local Nepali Sherpa populations – *University of Bologna – Italy, Chieti-Pescara – Italy, Chicago-U.S., Max Planck Institute-Germany*
- collected glacier photos and videos from 6350m asl – Independent Scientist with peer reviewed research
- and many other minor projects.

I am extremely comfortable in the field through extreme weather situation, as well as keeping a positive mindset in order to deliver critical thinking and team morale. These abilities and experiences led to my recruitment in assisting to establish the highest Via Ferrata in the Himalayas.

Work experience:

2011- current Field Researcher -Team Leader | Explora Nunaat International Himalaya – Nepal

- Sampling of soil, water -macrofauna- and algae at high altitude (between 2000m and 5000m asl)
- Collection of human biological specimens including dental impressions

2019- current Research Assistant / Laboratory Manager | Oroboros Instruments GmbH – Innsbruck, Austria

- Algal mitochondrial bioenergetics investigation using High-Resolution Respirometry on *Chlamydomonas reinhardtii*
- Presentation of scientific results to public, writing technical report
- Manage projects and budgets within different project funding-frameworks, including EU Horizon 2020
- Liaise between management, industry, and academic partners in different projects

2018-19 Laboratory Technologist | Medical University of Innsbruck / Oroboros Instruments GmbH – Innsbruck, Austria

- Mitochondria oxygen kinetics study at normobaric hypoxia on isolated mitochondria from mouse tissue
- Trace evaluation and result analysis using specialized software/scripts

2016-2017 Outdoor Instructor, Guide | Ghost River Rediscovery – Calgary, Canada

- Lead groups of people on backpacking trip in remote location
- Handle logistics and rescue procedures
- Work under pressure in a fast-paced and physically demanding environment

Education:

2014 Bachelor of Science in Biological Science at University of L'Aquila - L'Aquila, Italy
Thesis topic: "Glacier's Extreme Environment: Biodiversity and Adaptive Strategy"
2007 High School Diploma in Science and Technology -Teramo, Italy

Licenses and Certifications:

2019 Mitochondrial Physiology School – Coimbra, Portugal
2019 First Aid and CPR/AED - Erste Hilfe - Austrian Red Cross – Innsbruck, Austria
2019 German as a foreign language, basic level| A1 – University of Innsbruck, Austria
2018 Laboratory Animal Science Course (FELASA standard) – Medical University of Innsbruck, Austria
2017 ArcGIS operator course (Junior Level) – Regional Nature Reserve WWF's – Atri, Italy
2016 Interpretive Guide – Interpretive Guides Association Canmore – Calgary, Canada
2015 Apprentice Hiking Guide – Association of Canadian Mountain Guide – Jasper, Canada
2015 Wilderness First Responder – Medical (80 hours) – Wilderness Medical Association – Torrance, Canada
2010 Apprenticeship – Bacteriology Department of Experimental Zooprophylactic Institute – Teramo,Italy
2009 Orienteering Instructor – Italian Federation Orienteering Sport – L'Aquila, Italy

Selected Publications:

Gnecchi-Ruscone GA, Abondio P, De Fanti S, Sarno S, Sherpa MG, Sherpa PT, Marinelli G, Natali L, **Di Marcello M**, Peluzzi D, Luiselli D, Pettener D, Sazzini M (2018) Evidence of polygenic adaptation to high altitude from Tibetan and Sherpa genomes. Genome Biol Evol evy233 doi:10.1093/gbe/evy233

Gnecchi-Ruscone GA, Jeong C, De Fanti S, Sarno S, Trancucci M, Gentilini D, Di Blasio AM, Sherpa MG, Sherpa PT, Marinelli G, **Di Marcello M**, Natali L, Peluzzi D, Pettener D, Di Rienzo A, Luiselli D, Sazzini M (2017) The genomic landscape of Nepalese Tibeto-Burmans reveals new insights into the recent peopling of Southern Himalayas. Sci Rep 7: 15512. doi:10.1038/s41598-017-15862-z

Meszaros AT, Haider M, **Di Marcello M**, Gnaiger E (2018) High-resolution mitochondrial oxygen kinetics as diagnostic tool in Complex IV impairments presented at Mitochondrial Medicine 2018 Hinxton UK

Di Marcello M, Iglesias-Gonzalez J, Meszaros A, Haider M, Gnaiger E, Huete-Ortega M (2019) Partitioning between cytochrome *c* oxidase and alternative oxidase studied by oxygen kinetics of dark respiration in *Chlamydomonas reinhardtii*: a microalgae model organism. MitoFit Preprint Arch doi:10.26124/mitofit:ea19.MiPSchool.0005.v3.

Went N, **Di Marcello M**, Gnaiger E (2021) Oxygen dependence of photosynthesis and light-enhanced dark respiration studied by High-Resolution PhotoRespirometry. MitoFit Preprints 2021.5. doi:10.26124/mitofit:2021-0005

Huete-Ortega M, **Di Marcello M**, Iglesias-Gonzalez J, Gnaiger E (2020) High-resolution respirometry for chloroplast and mitochondrial bioenergetics in *Chlamydomonas reinhardtii* — towards biotechnology exploitations. MitoFit Preprint Arch doi:10.26124/mitofit:ea20.algaeurope.0001.