

Report: Dr. Maureen P. Swanney International Travel Award

Recipient: Michael Beaven



MGC DIAGNOSTICS



Conference:

- ❖ 2023 European Respiratory Society Congress
- ❖ 9th-13th September 2023
- ❖ MiCo Convention Centre, Milan, Italy

Summary of activities

- ❖ Presentations in Advanced Clinical Exercise Testing
- ❖ Skills workshop in CPET Interpretation
- ❖ Meeting the CPET experts
- ❖ Laboratory Visit

Summary of Insights and Collaborations

This enlightening experience broadened my knowledge in Cardiopulmonary Exercise Testing (CPET) and facilitated invaluable interactions with prominent experts, enriching our collective understanding. I gained comprehensive insights in CPET interpretation, spanning ventilatory efficiency, V_E/V_{CO_2} indices, respiratory mechanics, mitochondrial energy production, and the VO_2 work rate relationship. My prior connection and ongoing communication with Professor Pierantonio Laveneziana at last year's ERS skills workshop (ventilatory patterns and responses on exercise) served as a catalyst for these enlightening interactions.

Key Experiences and Knowledge gained

- ❖ CPET interpretation skills, including pathophysiological patterns and integrated physiological responses.
- ❖ Insights into mechanical respiratory constraints during exercise.
- ❖ Understanding of metabolic factors underpinning anaerobic threshold.
- ❖ A deeper delve into the VO_2 versus work rate relationship.
- ❖ Fruitful and engaging CPET discussions and presentations with many of CPET experts – see page 2!

Laboratory Visit – Centro Cardiologico Monzino, Milano, Lombardia, Italia

My visit to Professor Agostoni's CPET laboratory at Centro Cardiologico Monzino was an unforgettable experience. Engaging with the Data Analyst (Irene) and Cardiologist (Carlo) there proved enlightening. Irene shared comprehensive knowledge about lab operations and data management, sparking informative discussions around adjunct CPET measures like NIRS (Near-Infrared Spectroscopy), REDCap database management for large patient cohorts, and recent interesting publications from their team. Irene's warm welcome and expertise were highly appreciated. Carlo provided practical insights into CPET and cardiological service logistics, and graciously engaged me in discussion around identified exercise limitations for the clinical cases he allowed me to witness. Witnessing CPET procedures firsthand enhanced my understanding around the performance (and efficiencies) of CPET that I would like to consider investigating/implementing here in Perth.

Concluding Remarks

These experiences showcased moments of growth, and collaborations with these experts deepened my understanding of the clinical investigations we undertake in our day-to-day roles. This provided fundamental insights that bolstered my understanding of clinical exercise physiology, and hopefully for my fellow colleagues around the world, too. From this experience, and through my continued studies and practices, I wish to consolidate and share this knowledge, with the hope that my colleagues throughout Australasia find it informative and useful. In conclusion, this remarkable journey fostered invaluable connections and knowledge-sharing. I encourage all members of ANZSRS to support and utilise the Maureen Swanney Award to pay-forward a legacy of generosity and success, and to acknowledge the support of our committed sponsor, MGC Diagnostics Inc.

Thank you to both ANZSRS and MGC Diagnostics Inc. for supporting this amazing opportunity!

Michael Beaven, BSc (Hons.), GradCert RespSci, CRFS, ACP (Respiratory)
Respiratory and Sleep Scientist | PhD Candidate

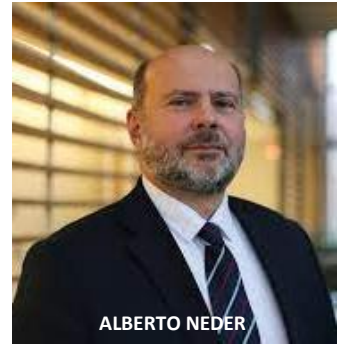
Some of the interesting (famous) people I met:



PIERANTONIO LAVENEZIANA

❖ Prof. Pierantonio Laveneziana (Paris, France): Discussing CPET data integration and valuable CPET indices in the metabolic, cardiovascular, and respiratory responses to exercise.

❖ Prof. Alberto Neder (Ontario, Canada): Presentation sharing insights into diagnostic utility of V_E/V_{CO_2} during CPET and its various indices for ventilatory efficiency.



ALBERTO NEDER



WILLIAM STRINGER

❖ Prof. William Stringer (Los Angeles, USA): Fundamentals of metabolic demand, musculoskeletal metabolism, anaerobic threshold, and lactic acidosis.

❖ Prof. Paolo Onorati (Sardinia, Italy): Explanation of the VO_2 versus work rate relationship, oxygen cascade, and substrate utilisation.



PAOLO ONORATI

❖ Dr. Michele Schaeffer (Leuven, Belgium): Presentation sharing detailed insights into respiratory constraints and diaphragmatic EMG signal usage.



MICHELE SCHAEFFER

❖ Prof. Piergiuseppe Agostoni (Milan, Italy): Presenting introducing and explaining the MECKI score for heart failure prognosis. CPET laboratory visit.



PIERGIUSEPPE AGOSTONI

❖ Prof. Paolo Palange (Rome, Italy): Met during a CPET poster session, he has a passion for encouraging and educating young scientists, technicians, and doctors in the field.



PAOLO PALANGE