



Respirometry Course – Las Vegas, Nevada

An Introduction to Animal Respirometry:

March 24-27, 2020

The respirometry course – held in Las Vegas, NV – teaches participants how to use indirect calorimetry. We will apply techniques for measuring real-time O₂ consumption, CO₂ production, and water loss for subjects ranging from small invertebrates to large mammals. Participants will work on both single-animal and multiplexed systems in both open-flow and stop-flow configurations. Data analysis is a significant focus of this course – so feel free to bring your own data sets.

Hands On: The course leads participants through all steps of setting up apparatus, calibrating and troubleshooting, acquiring data, and analyzing data using Sable Systems metabolic systems

Cost: \$2,140 per participant. Included in this fee are all laboratory costs, course materials, lunches, one-on-one data analysis review and discussion with our in-house experts, a signed copy of Dr. Lighton's book, and many extras.

Course Materials: All coursework materials are provided including copies of all presentations.

Instructors: The course is taught by Dr. John Lighton and the Sable Systems scientific team. Dr. Lighton – the president of Sable Systems – is a world expert on respirometry with over 100 peer-reviewed publications on respirometry in scientific literature. Dr. Lighton is also the author of the preeminent textbook on respirometry: "Measuring Metabolic Rates: A Manual for Scientists: 2nd Edition (2019)", available from Oxford University Press.

Registration: For questions, more information, or to register, contact Sable Systems by email to support@sablesys.com or by phone at 702-269-4445 in the US or +49 30 53054 1002 in the EU.



Respirometry Course – Schedule

Day 1:

- **Welcome and Orientation:**
Introduction to workspace and equipment.
- **Classroom Lectures:**
Theory of respirometry including stop-flow and open-flow techniques. Fundamentals of gas analysis. Instruction on integrating instrumentation and acquisition systems for maximum productivity.
- **Introduction to Data Acquisition:**
Initial work with Expedata software and instrumentation begins that afternoon.

Day 3:

- **Data Acquisition:**
Using Expedata, acquire data from various respirometry systems continues. Participants will measure metabolism under the close supervision of instructors.
- **New Techniques:**
Stop-flow and high-throughput systems are discussed and setup by students.
- **Data Analysis:**
Advanced Expedata analysis tools begins toward the end of the day.

Day 2:

- **Additional Lectures:**
Review of Day 1 lectures and additional information about analyzer functions.
- **System Setup:**
Complete setup of a respirometry system. Several different stations are setup for different subjects of study.
- **Data Acquisition:**
Using Expedata, setup the data acquisition to coordinate with the various respirometry systems at each station.

Day 4:

- **Data Analysis:**
Methods for automating and repeating data analysis will be covered in detail.
- **Advanced Data Analysis:**
New techniques in data analysis will be covered on an individual basis.
- **Future Considerations:**
Group discussions on what the data tells us – and what it doesn't. Students will compare and contrast different experimental approaches.