



## 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 O<sub>2</sub> consumption, CO<sub>2</sub> 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: 2<sup>nd</sup> Edition (2019)", available from Oxford University Press.

**Registration:** For questions, more information, or to register, contact Sable Systems by email to [support@sablesys.com](mailto: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.