

Pressure Volume Assessment: Rodent Cardiac Function Training

Daylong Training Course for the Cardiovascular Scientist

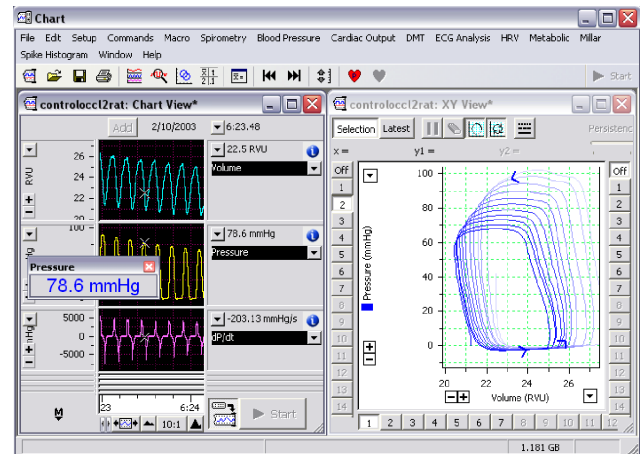


ADInstruments is pleased to offer professional on-site installation and training for the In Vivo Pressure Volume System. Leverage the knowledge and experience of ADInstruments' Product Engineer to maximize your equipment investment and curtail typical experimental roadblocks. You and your staff will reap the benefits of access to someone possessing a strong background in Biomedical Engineering with extensive experience providing training and technical support to cardiovascular research scientists.

ADInstruments has designed a daylong training course which pairs the essential theory, surgery, equipment and software components necessary to implement successful cardiac function research studies from day one. This course can be held in your lab using your equipment at your convenience.

Services Provided:

- Equipment Configuration & Software Installation
- PV Introduction & Background
- Pressure Volume Catheters
- Cardiac Catheterization
- Pressure Volume Applications
- PowerLab Data Acquisition & Chart Software Overview
- Pressure Volume Analysis Software (PVAN) Overview



Rat IVC Occlusion

CAN'T AFFORD TO WASTE ANY TIME GETTING STARTED?

Avoid common pitfalls and take the right steps to streamline your physiological data acquisition and produce valid results from day one. Investing in a detailed and structured training program encouraging hands-on learning will shorten the learning curve and fast track your studies.

Training Overview:

Equipment Configuration & Software Installation

- **Pressure Volume System Setup:** Equipment Introduction & Overview, Catheter Components, Controls and Indicators, PowerLab and MPVS Connections, Powering up the System
- **Software Installation and Licensing:** Chart, Chart Extensions, Chart Modules, PVAN

PV Introduction & Background

- **Introduction to Pressure Volume Loops:** Isovolumetric Contraction, Ejection, Isovolumetric Relaxation, Diastolic Filling, Stroke Volume, Stroke Work
- **Impedence/Conductance Theory & Technique:** Ohm's Law, Volume Estimation

Pressure Volume Catheters

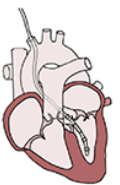
- Catheter Technology
- Proper Handling Techniques
- Calibration
- Cleaning
- Storage



Cardiac Catheterization

- **Left Ventricle Entry Methods:** Carotid Artery & Open Chest Apical Stab

PLEASE NOTE: ADInstruments' staff is not permitted to perform animal surgeries. Surgical training is available through ADInstruments' Experimental Workshop Series.



Pressure Volume Applications

- **Baseline**
- **Occlusion:** Aortic & Inferior Vena Cava (IVC)
- **Saline Bolus:** Parallel Conductance

PowerLab Data Acquisition & Chart Software

- **Getting Started:** Basics of Data Acquisition (Sampling Rate, Filtering, Digitization, Range, Noise, Display)
- **Introduction to Chart:** Opening Chart Files, Closing a File or Exiting Chart, The Toolbar, Recording (Display while Recording, Blocks and Settings, Recording or Monitoring, Adding Comments, Recording Durations, Data Buffering)
- **Setting up Chart:** Sampling Rates, Channel Controls and Settings, The Input Amplifier, Units Conversion, Preset Comments
- **Data Display:** The Chart View (Changing Channel Size, The Split Bar, Amplitude Axis), Display Settings, Channel Settings, The Zoom View, Organizing Chart Windows
- **Working with Files:** Selecting Data using Set Selection, Deleting Data, Transferring Data (Copying and Pasting to other Applications), Saving Options, Appending Files, Printing
- **Data Analysis:** Finding Data, Comments and Events, The Data Pad (Adding Data to the Data Pad: Real Time Automations, Saving as Text or Excel, Spreadsheet Functions), The XY View (Online & Offline Operation, Printing & Copying), The Spectrum Window, The Notebook Window, Channel Calculations (Arithmetic, Digital Filter, Derivative: dP/dt , Smoothing, Cyclic Measurements: Heart Rate, Mean BP, Diastolic, Systolic)
- **Customizing & Automating:** Preferences, Macros, Chart Extensions, Chart Modules, Software Updates

Pressure Volume Analysis Software (PVAN)

- **PVAN Extension:** Exporting data from Chart to PVAN
- **Running P-V Analysis:** Opening Data Files, Configuration Menu, Reading Data Files, P-V Waveforms Screen, Volume Calibration (RVU Calibration, Background, Procedure), Converting RVUs to Units of Volume Using the Cuvette Calibration Method (Procedure, PVAN Calibration Screen, Cuvette Calibration Screen)
- **Loop Analysis:** Steady-State (Waveform Shift, Select Good Loops, Hemodynamic Table, Saline Calibration: Compensating for Parallel Conductance), Occlusion (Contractility: ESPVR & EDPVR, PRSW, $dP/dt_{max-EDV}$, E_{max} : time-varying maximal elastance, PVA: pressure-volume area)
- **Saving Analysis Results:** Exiting the Program (File Export to Excel)

