

# CENTER FOR BLOOD OXYGEN TRANSPORT & HEMOSTASIS

## Red Blood Cell and Hematology Core

### CORE SERVICES

- Complete blood counts (human and animal). Human with differential. Animal differential only for canine and feline samples.
- Arterial Blood Gas (ABG) measurement - certain electrolyte and metabolite measurements also available.
- Analysis of whole blood or RBC mechanics (ektacytometry - osmotic fragility, deformability, aggregation).
- Analysis of RBC/Hb oxygen affinity (Oxygen dissociation curve - simultaneous measurement of hemoglobin oxygen saturation and pO<sub>2</sub> to generate the ODC)
- Analysis of vasoactivity in an aortic ring bioassay (rabbit aorta typically used):
  - Hypoxic vasodilation - Percentage relaxation of a precontracted aortic vascular ring held under hypoxic conditions
  - Normoxic vascular constriction - Maximal rate of increase in vascular tension of an aortic ring held under normoxic conditions (constricted with PE and relaxed with ACh)
  - Influence of sample on vascular endothelial function (incubation with the ring and testing of constriction and endothelial dependent and independent relaxation responses)
- Measurement of nitric oxide metabolites by ozone based chemiluminescence. We offer photolysis, triiodide, vanadium chloride, 3Cs, or other methodologies on request
- Measurement of nitric oxide scavenging - i.e., a nitric oxide quenching system.
- Blood rheology measurement
- Colloid oncotic pressure measurement.
- Osmolality measurement.

### MISSION

The Red Blood Cell (RBC) Physiology and Hemostasis Core is designed to facilitate research related to RBC function/performance and blood component biology. Our mission is to provide access to cutting edge technology and world class expertise to answer fundamental research questions related to blood and hemodynamic function in health and disease.

The RBC Physiology and Hemostasis Core offers unique resources to CBOH investigators and Collaborators (within the University of Maryland Medical System). The services provided by the Core allow evaluation of RBC biochemistry, morphology, physiology, and biophysics, and their effect on vascular regulation and O<sub>2</sub> delivery.

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### CORE INSTRUMENTATION



Horiba Micros ESV 60 Hematology Analyzer for Veterinary Samples



Horiba Micros 60 Hematology Analyzer for Human Samples



Hemox Analyzer



LORRCA MaxSis Red Blood Cell Analyzer



RADNOTI Vascular ring system

ABL 90 FLEX PLUS Blood Gas Analyzer

Rheometer

### CONTACT



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### LOCATION

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