



**SUPPLEMENTAL FIGURE 1:** Recirculation (red circle) is effectively a left to right shunt. The recirculation fraction =  $(O_2SatR - O_2SatCV) / (O_2SatR - O_2SatD)$ , where  $O_2SatR$ ,  $O_2SatCV$ ,  $O_2SatA$ ,  $O_2SatD$  = return, central venous, arterial and drainage oxygen saturation respectively.