Clinical Abstracts should contain the following elements:

- Hypothesis/Problem
- Methods/Approach
- Results/Observations
- Conclusions

These elements are color-coded in the sample below for easy reference.

**Urinary Alkalization in the Treatment of Traumatic Rhabdomyolysis in Rhesus Macaques**

A 15-y-old, 9.1-kg female rhesus macaque (Macaca mulatta) housed in an outdoor breeding group presented with severe crush wounds inflicted by cagemates. Physical exam revealed a capillary refill time of 6 s, pale mucous membranes, and a heart rate of 192 BPM. Severe echymosis, edema, and lacerations were noted on the extremities, thorax, perineum, and face. Due to marked hypovolemia, an IV catheter could not be inserted. An intraosseous catheter was placed and blood samples collected. The animal was secured to a restraint board and a urinary catheter inserted. Lab results included: BUN 52 mg/dl, CREAT 3.7 mg/dl, CPK > 30K U/l, K+ 4.5 mEq/l, and WBC 18K /ul. A urine test strip indicated a pH of 6.0 and Blood 4+, in the absence of hematuria. These strips cross-react with myoglobin, a hemoprotein found in muscle and associated with acute renal failure 48 to 72 h post-crush injury. Current medical literature suggests urinary alkalization (to pH > 6.5) increases myoglobin byproduct solubility in urine, allowing renal excretion with minimal tubular damage. This principle has been demonstrated to increase survival in earthquake victims with analogous injuries. Fluid therapy was initiated with 0.9% saline plus 50 mEq/L of sodium bicarbonate; 20 ml/kg was infused over 30 min, followed by 30 ml/kg/h for a total volume of 110 ml/kg. Urine output was monitored to maintain 1 to 2 ml/kg/h and a pH above 6.5. For 2 subsequent days, IV fluids were administered at 20 ml/kg/h for 100 ml/kg/d. The myoglobinuria resolved, bicarbonate was discontinued, and lab values returned to normal ranges. In the 8 preceding months, 1 macaque with rhabdomyolysis (RM) failed to respond to conventional fluid therapy, and 4 others were found dead with signs of RM. Since implementation of this protocol, 4 of 4 macaques presenting with traumatic RM (CPK > 65K U/l in one case) have been treated successfully. Urinary alkalization, correction of metabolic acidosis, and the treatment of hyperkalemia often associated with RM make bicarbonate a rational adjunct therapy for the condition in the rhesus macaque.