Recent Pharmacology Studies on the International Space Station

The environment on the International Space Station (ISS) includes a variety of potential stressors including the absence of Earth's gravity, elevated exposure to radiation, confined living and working quarters, a heavy workload, and high public visibility. The effects of this extreme environment on pharmacokinetics, pharmacodynamics, and even on stored medication doses, are not yet understood. Dr. Wotring will discuss recent analyses of medication doses that experienced long duration storage on the ISS and a recent retrospective examination of medication use during long-duration spaceflights. She will also describe new pharmacology experiments that are scheduled for upcoming ISS missions.

Dr. Virginia E. Wotring is a Senior Scientist in the Division of Space Life Sciences in the Universities Space Research Association, and Pharmacology Discipline Lead at NASA's Johnson Space Center, Human Heath and Countermeasures Division. She received her doctorate in Pharmacological and Physiological Science from Saint Louis University after earning a B.S. in Chemistry at Florida State University. She has published multiple studies on ligand gated ion channels in the brain and spinal cord. Her research experience includes drug mechanisms of action, drug receptor structure/function relationships and gene & protein expression. She joined USRA (and spaceflight research) in 2009. In 2012, her book reviewing pharmacology in spaceflight was published by Springer: *Space Pharmacology,* Space Development Series.