STANDARD OPERATING PROCEDURES (SOP)
MEASLES PROTECTION PROGRAM

1. **SCOPE**

Measles or rubeola infects human and old and new world non-human primates including macaques, chimpanzees, marmosets, and owl monkeys. Symptoms of measles include a fever, rash and upper respiratory symptoms. The virus can also cause immunosuppression that can lead to pneumonia, otitis media, conjunctivitis, hepatitis, meningitis and encephalitis. In non-human primates, measles has also been associated with endometritis and spontaneous abortion. Macaque to human transmission of measles has been documented. This SOP was designed to establish a system of information and safeguards to be utilized to control the spread of measles infection at the University of Pittsburgh research environments.

2. **PROCEDURE**

2.1 Agent- Measles or rubeola, genus Morbillivirus

2.2 Employees at risk- Naturally or experimentally infected laboratory animals are a potential source of infection to exposed unvaccinated laboratory personnel. An additional potential risk to laboratory personnel and animal users is also through the direct contact with material from infected animals or infected human volunteers.

2.3 Animal populations at risk – Old and new world non-human primates including macaques, chimpanzee, marmosets and owl monkeys are susceptible to measles, and human to non-human primate transmission has been demonstrated. Distressed animals, infants and juveniles are most susceptible.

2.4 Laboratory Hazards - Measles is spread by airborne droplets or fomites. It is highly contagious to unvaccinated individuals and non-human primates.

2.5 Required Procedures

2.5.1 All Principle Investigators (PI's) using virus of the genus Morbillivirus must register their research via the MyIBC system.

2.5.2 University of Pittsburgh requires measles immunization or demonstration of immunity for all individuals, faculty, staff, and students, who directly contact or manipulate non-human primates, or who utilize measles virus in research.

2.5.2.1 The PI or department director/ supervisor must arrange for all individuals with responsibility for direct handling of non-human primates or the measles virus to be medically evaluated for measles immune status by Employee Health Services.

2.5.2.2 Following this counsel all such individuals must sign a measles immunization acceptance/declination form prior to continued work with non-human primates or measles virus at the University of Pittsburgh. The form will be maintained by Employee Health Services.

2.5.2.3 Individuals refusing vaccination, having medical contra-indication, or who are not able to demonstrate development of a titer may be prohibited from handling non-human primates or measles virus. This determination is made by an ad hoc panel which may include the University Employee Health Medical Director, the University Director of Environmental Health and Safety, the University Biological Safety Officer, Human Resources representation, the Principal Investigator of the involved research, Provost Office representation if faculty are involved, and the University Attending Veterinarian, if animals are involved.

2.5.3 **Implementation-** MMR (measles, mumps, rubella) vaccine will be used to vaccinate individuals identified as having insufficient immunity.

2.5.3.1 Anyone having a 0 titer as demonstrated by an approved clinical test performed by a qualified diagnostic laboratory will receive two vaccines given 4 weeks apart. At an appropriate interval following vaccination development of titer will be verified prior to clearance.

2.5.3.2 Individuals with a titer greater than 0, but less than the approved clinical test cut off level for immunity as indicated by testing at a qualified diagnostic laboratory, will be given one booster dose. At an appropriate interval following booster development of titer will be verified prior to clearance. If titer test is still negative (below cut off levels) after booster dose, up to two booster doses may be given, as determined by the University Employee Health Medical Director, followed by an additional MMR titer test.

2.5.3.3 Anyone who has never been vaccinated and who is not known to have had measles will receive two vaccines given 4 weeks apart. At an appropriate interval following vaccination development of titer will be verified prior to clearance.

2.5.3.4 In cases where individuals are not able to demonstrate sufficient immunity via appropriate titer, determination of clearance to enter non-human primate facilities, particularly facilities housing transgenic marmosets, will be made by the University Attending Veterinarian with advice from the University Employee Health Medical Director.