**Longwood University Biological Research Registration**

**Appendix B: Definitions**

Defective virus - A virus genetically deficient in replication, but that may nevertheless be replicated when it co-infects a host cell in the presence of a wild type helper virus.

Eukaryotic cell - Cells of the higher organisms, containing a true nucleus bounded by a nuclear membrane.

Genome - The total set of genes carried by an individual or cell.

Helper virus - A virus that will allow the replication of a co-infecting defective virus by producing the necessary protein.

Host cell - A cell that is used in lab techniques such as DNA cloning to receive, maintain, and allow the reproduction of recombinant DNA cloning vectors. The DNA introduced with the vector is replicated whenever the cell divides and the recombinant proteins encoded for by the plasmid are reproduced in large quantities.

Host-vector system - A combination of a bacterial host cell (i.e. A specific strain) and a virus vector (i.e. A particular bacteriophage strain) which work well together for DNA cloning.

Infectious - Capable of being transmitted by infection, with or without actual contact. Denoting a disease due to the action of a microorganism.

*In vitro* - Within a glass, observable in a test tube, in an artificial environment.

*In vivo* - Within the living body.

Phage - (bacteriophage) A virus which infects bacteria.  Bacteriophage consist of a head (which contains DNA, the genetic material of the virus), a tail, and tail fibers.

Plasmid - A circular piece of extrachromosomal DNA which contains an origin of replication allowing it to replicate autonomously in a bacterial cell.  Typically, a plasmid will also have restriction enzyme sites which allow foreign genes to be introduced, as well as at least one selectable marker, such as an antibiotic resistance gene.  Plasmids are used as "cloning vectors" to introduce foreign genes into bacteria where they can be expressed.

Prokaryotic cells - Cells, such as those of bacteria and the blue green algae, which lack a nuclear membrane so that the nuclear material is either scattered in the cytoplasm or collected in a nucleoid region.

Transgenic - This term describes an organism that has had genes from another organism put into its genome through recombinant DNA techniques.

Vector - Commonly term for a plasmid that can be used to transfer DNA sequences from one organism to another.

Wild type - The naturally-occurring, normal, non-mutated version of a gene.