

Genetics and Molecular Biology: Lecture 1

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- Aspects of an Experiment
 - Dependent Variable - what is measure, not manipulated
 - Independent Variable - what is manipulated
 - Controls:
 - Positive Control: Independent variable will affect the dependent variable in a known way
 - Negative Control: Independent variable will not affect the dependent variable
 - Experimental/Treatment: Unknown outcome, test goal
 - Standardized Variables: Variables kept the same for treatment and control groups to isolate cause and effect
- Frederick Griffith - 1928
 - Mixing harmless bacterial with material from heat-killed dangerous bacteria “transforms” them into dangerous bacteria
 - rough strain (non-virulent) → mouse lives
 - smooth strain (virulent) → mouse dies
 - heat-killed smooth strain → mouse lives
 - rough strain + heat-killed smooth strain → mouse dies
 - Genetic transformation
- Oswald Avery, Colin MacLeod, and Maclyn McCarty - 1944
 - DNase + heat-killed smooth strain + rough strain → mouse lives
 - protease + heat-killed smooth strain + rough strain → mouse dies