



Howard Hughes Medical Institute: 2002 Annual Report; Student Activity

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Fill in the blanks below by reading the descriptions of a variety of scientific studies.

1. Researchers at the Fred Hutchison Cancer Research Center are moving closer to understanding how the brain _____; this information will show how signals from different odor receptors are arranged in the brain’s olfactory cortex.
2. Researchers from the Case Western Reserve University School of Medicine is investigating how a bone “thermostat” provides insights into a rare genetics disorder that causes _____. The scientists are studying a gene that appears to act as a thermostat to control bone growth during the first three decades of life.
3. A researcher from the Stanford University School of Medicine is studying the _____ evolutionary radiation to provide an opportunity to _____ that nature uses to create a new species.
4. A scientist at the University of Pennsylvania School of Medicine is using the fruit fly as a model for investigating human neurodegenerative diseases, including _____. The scientists have demonstrated that a particular protein in the Hsp70 family suppresses the toxicity of α -synuclein.
5. An investigator at The Johns Hopkins University School of Medicine has developed a technique to test stool samples for _____ that triggers colon cancer.
6. Another scientist at the University of Utah School of Medicine is studying the homeobox or *Hox* genes that dictate the general outline of the body plan and have linked these genes to _____ disorder. HHMI researchers knocked out a specific Hox gene in mice and observed _____.
7. Another scientist from the Salk Institute for Biological Studies has shown that _____ produced by astrocytes may be critical in regenerating _____.

8. Another scientist from the Johns Hopkins University School of Medicine has isolated a chemical compound from a weed that grows _____ and has shown that the drug kills cells from medulloblastoma.
9. A researcher at Children's Hospital in Boston has shown that a variant form of a gene found in some African Americans may increase the chances of developing a _____. The gene *SCN5A* codes for a protein in the heart muscle called a sodium channel.
10. An investigator at Brigham and Women's Hospital in Boston has identified two new drugs that inhibit _____; this enzyme drives the development of the deadliest form of AML.
11. A researcher out of Columbia University College of Physicians and Surgeons has administered a precise mix of chemical signals to embryonic stem cells to coax _____. This same type of approach might be used to regenerate human nerve tissue lost to disease or trauma.