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April 30, 2010- Nancy L. Craig, Ph.D., a professor of molecular biology and genetics, and King-Wai Yau, Ph.D., a professor of neuroscience and ophthalmology, both in the Johns Hopkins University School of Medicine, are among 72 scientists nationwide newly elected to membership in the National Academy of Sciences, an honorary society that advises the government on scientific matters.

“Johns Hopkins is very proud that the Academy has chosen to recognize Nancy and King-Wai,” says Stephen Desiderio, M.D., Ph.D., director of the Johns Hopkins Institute for Basic Biomedical Sciences. “Both have made seminal discoveries in their respective fields over the years and their elections are well deserved.”

A Howard Hughes Medical Institute investigator, Craig studies the molecular mechanisms by which so-called transposable elements move and how they can be exploited for genetic engineering. Composed of DNA sequences with no fixed address, these travelling salesmen of the genome are present in virtually all organisms and contribute to both genome structure and function. One important consequence of transposon insertion is that information encoded by the transposon becomes stably linked with its DNA target. About one half of the human genome is composed of DNA sequences related to transposable elements, which are emerging as potentially important predictors of human traits and diseases. Craig currently is focusing her research efforts on how several different transposons choose their new insertion sites.

Craig, who joined the Hopkins faculty in 1991, was previously a faculty member in the Department of Microbiology & Immunology at the University of California, San Francisco. She earned an A.B. in biology and chemistry from Bryn Mawr College and a Ph.D. in biochemistry from Cornell University after graduating from Concord High School in Concord, CA.

Yau’s primary research interest lies in the flow of signals important in sight and smell. Among his discoveries are the critical roles played by two key signaling molecules — calcium and cyclic GMP — in the process of converting light into electrical signals by the rod and cone photoreceptor cells in the retina, a process known as visual transduction. In addition to advancing the understanding of hereditary blinding diseases that affect rod and cone cells, Yau characterized the light-response behaviors of a newly discovered photoreceptor cell in the retina. These cells can react to light and affect circadian rhythms and other non-visual aspects of the brain’s visual system. Yau also contributed to finding the cause of one form of central vision loss.

Yau, who joined the Johns Hopkins faculty in 1986, earned an A.B. in physics from Princeton University and a Ph.D. in neurobiology from Harvard University.

“Nancy’s and King-Wai’s election to the Academy attests to the strength of the research enterprise at Johns Hopkins,” says Chi V. Dang, M.D., Ph.D., vice dean for research. “We couldn’t be happier for them.”

The election of Craig and Yau, held during the 147th annual meeting of the Academy in Washington, D.C., brings the total number of active members to 2,097.

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its use for the general welfare. It was established in 1863 by a congressional act of incorporation signed by Abraham Lincoln that calls on the Academy to act as an official adviser to the federal government, upon request, in any matter of science or technology.

On the Web:

http://www.bs.jhmi.edu/mbg/craiglab/welcome.html

http://www.neuroscience.jhu.edu/KingWaiYau.php

http://www.nasonline.org/site/PageServer

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Previous | Next
Return to Top