

## THE J. DAVID GLADSTONE INSTITUTES

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## GLADSTONE INSTITUTE OF CARDIOVASCULAR DISEASE NEWS

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### **FOR IMMEDIATE RELEASE**

#### **GLADSTONE'S SHINYA YAMANAKA WINS KYOTO PRIZE**

*Cited for reprogramming discovery that changes adult cells to embryonic-like stem cells*

SAN FRANCISCO, CA—June 18, 2010 – Shinya Yamanaka, MD, PhD, of the Gladstone Institute of Cardiovascular Disease (GICD) and Kyoto University, has won the 2010 Kyoto Prize for Advanced Technology. Yamanaka, who is the L.K. Whittier Investigator in Stem Cell Biology at Gladstone, and professor of anatomy at UCSF, was cited for his discovery of a method of reprogramming adult skin cells to become embryonic-like stem cells. The discovery has opened up the field of stem cell research and dramatically changed the field of cell biology.

The Kyoto Prize is an international award honoring those who have contributed significantly to humankind's scientific, cultural, and spiritual development. The prize is presented annually in three categories: Advanced Technology, Basic Sciences, and Arts and Philosophy. Consisting of academic honors, a commemorative gold medal and a cash gift of 50 million yen (approximately \$500,000), it is Japan's highest private award for global achievement.

While other scientists continued to experiment with a traditional approach to learn how embryonic stem cells differentiate to become different kind of cells, Dr. Yamanaka and his team took what was considered a contrarian approach to learn how differentiated adult cells might be reprogrammed back to their embryonic or “pluripotent” state. Yamanaka and his colleagues found that by introducing four genetic factors, skin cells from an adult would transform into cells that behaved just like embryonic stem (ES)

cells, and he coined the term “induced pluripotent stem cells” or iPS cells. The simplicity of Yamanaka’s technology was initially met with skepticism, but Yamanaka made his data and the DNA of his work publicly available to enable any scientist to work with these new cells, and within months scientists across the world had reproduced and adopted this new approach to generating and studying stem cells.

“Dr. Yamanaka fundamentally changed the way we think about the biology of stem cells and opened new possibilities for the practical applications of that knowledge,” said R.Sanders Williams, MD, PhD, Gladstone president. “That adult cells could be reprogrammed and assigned different properties is one of the most significant discoveries of this decade.”

Since Yamanaka’s discovery, he and other scientists have learned more efficient ways to make iPS cells and have used them to create other types of cells including neurons, heart cells etc. Many have made iPS cells from patients with disease and hope to use these human cells to model the disease, so that new drug therapies could be discovered to alleviate human suffering.

The Kyoto Prize is given by the Inamori Foundation, which was established in 1984 by Dr. Kazuo Inamori, founder and chairman emeritus of Kyocera and KDDI Corporation. The Kyoto Prize was established, in line with Dr. Inamori's belief that a human being has no higher calling than to strive for the greater good of society, and that the future of humanity can be assured only when there is a balance between our scientific progress and our spiritual depth. An emblematic feature of the Kyoto Prize is that it is presented not only in recognition of outstanding achievements, but also in honor of the excellent personal characteristics that have shaped those achievements.

### **About Shinya Yamanaka**

Shinya Yamanaka spent two years as an orthopedic surgeon before being attracted to the field of basic research in 1993. He joined the Gladstone Institutes as a postdoctoral fellow where his early research into proteins involved in cholesterol metabolism led him to the study of embryonic stem cells and differentiation. Yamanaka has affiliations and research laboratories at Kyoto University’s Center for iPS Cell Research and Application (CiRA) and the Gladstone Institutes. In recognition of his reprogramming discovery, Yamanaka has received the Shaw Prize, the Gairdner Award, the Lasker Award and the March of Dimes Award.

### **About the Gladstone Institutes**

The J. David Gladstone Institutes, an independent, nonprofit biomedical research organization, affiliated with the University of California, San Francisco, is dedicated to the health and welfare of humankind through research into the causes and prevention of some of the world's most devastating diseases. Gladstone is composed of the Gladstone Institute of Cardiovascular Disease, the Gladstone Institute of Virology and Immunology and the Gladstone Institute of Neurological Disease. More information can be found at [www.gladstone.ucsf.edu](http://www.gladstone.ucsf.edu).

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