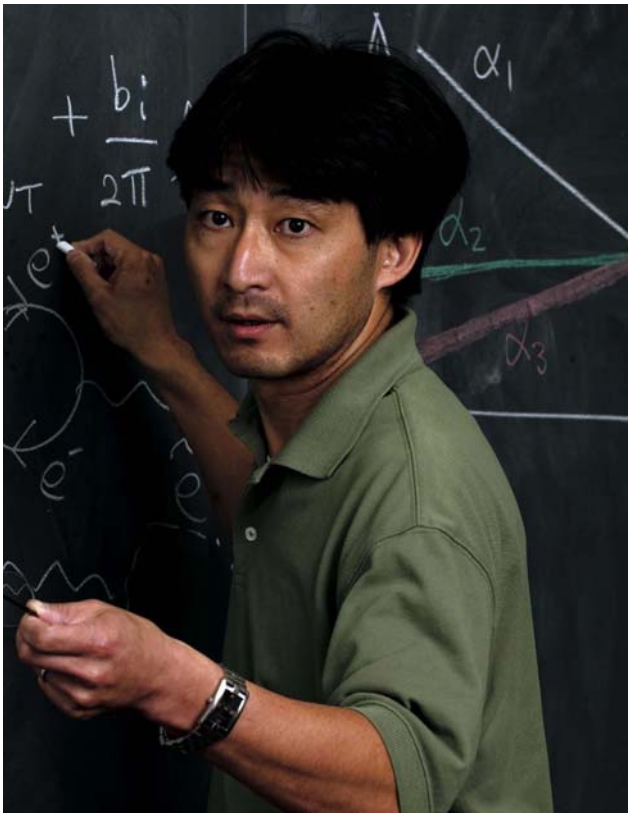
IPMU INSTITUTE FOR THE PHYSICS AND MATHEMATICS OF THE UNIVERSE

The University of Tokyo
WPI Institute for the Physics and Mathematic of the Universe

Hitoshi Murayama appointed as the founding director of Institute for the Physics and Mathematics of the Universe at the University of Tokyo

Tokyo, Japan — Hitoshi Murayama was appointed this month as the founding director of Institute for the Physics and Mathematics of the Universe (IPMU) at the University of Tokyo.

IPMU is a new international research institute in which English is to be its official language. The goal of the institute is to discover the fundamental laws of nature and to understand the universe from the synergistic perspectives of mathematics, statistics, theoretical and experimental physics, and astronomy. IPMU was launched as one of the World Premier International Research Centner Initiative (WPI) of the Ministry of Education, Culture, Sports, Science and Technology (MEXT). Its projected annual budget is about $10M and is currently approved for ten years of operation. It is



expected to have about 70 full-time scientists and involve more than a hundred collaborators. The University is committed to its success. For example, it will open an on-site day care, build a new research building by fall 2009, as well as a new International guesthouse by spring 2009.

IPMU will address the most basic and profound mysteries of the universe. *What is the universe made of? How did it begin? What is its fate? What fundamental laws govern it? Why do we exist at all?* The aim of IPMU is to address these rather simple questions human beings had pondered over for millennia, using the power of forefront science. Indeed, we have learned amazing facts about the universe in the last decade. Much of the component of the universe is not made of the kind of matter we know well, namely atoms, but rather of substances called dark matter and dark energy. Their true identity, called "dark" because they don't emit light and therefore we cannot see directly, is totally unknown at this moment. To address such deep mysteries we need to create new data, to develop new statistical methods to analyze them, to build new physical theories to understand them, and create new mathematics to formulate them.

The WPI program was announced to create institutions "*visible worldwide*" on science and engineering research, and five proposals were approved nationwide among many from universities and research centers. The selection committee commented on the proposal, "*A constellation of world class top-notch researchers with meaningful commitment to the project is presented. This will give a good public image for the WPI Initiative — young, dynamic, and exciting. Young, highly articulate prospective center director who is visionary and energetic is a very positive attribute.*" In addition, it praised the University of Tokyo as its host organization, "*Strong and substantial supports from the host institution and University President are presented.*" A bold Institute concept and the strong support from the University were the key for the approval of the proposal.

Hiroshi Komiyama, President of the University of Tokyo says, "*It is our great pleasure to have Prof. Hitoshi Murayama as the founding Director of IPMU. Soon after he received his Ph.D. at our university, he moved to the US and has developed his outstanding career there. It is wonderful that the establishment of IPMU is so much exciting scientifically that the world leading young scientist has decided to come back to his old university.*"

Saul Perlmutter, his colleague at Berkeley who is widely credited for the discovery of the dark energy, congratulates, "*It is wonderful to hear about the establishment of the Institute for the Physics and Mathematics of the Universe at the University of Tokyo. It is great to have an institute that can showcase the leadership roles that Japanese scientists are playing in this exciting field. The international nature of IPMU will also foster the international collaborative work that has played such an important role in developing this field.*"

About this appointment, Persis Drell, director of Stanford Linear Accelerator Center says, "*Hitoshi has an open personality, a very collaborative style, an unmistakable enthusiasm for the field in its entirety, and he commands tremendous respect from his peers. I believe that an 'Institute for the Physics and Mathematics of the Universe' is a tremendous opportunity for Japanese science and Hitoshi is an outstanding choice to lead this effort.*" Riccardo Barbieri, influential theoretical particle physicist of Scuola Normale Superiore, Pisa, agrees, "*Given the*

interdisciplinary character of the Centre, I hardly see worldwide anybody more apt than Professor Murayama to play the role of Director of such a Centre." Young-Kee Kim, Deputy Director of Fermilab adds, "*His lectures are remarkably clear and he is one of the very best science communicators that I have ever known. He has the incredible ability of energizing and exciting the public all the way from elementary school students and graduate students to senior citizens. His talks have influenced scientists in many fields. Professor Murayama has a unique and rare combination – a distinguished physicist with intellectual leadership, a fantastic lecturer, and an incredible visionary.*"

Hitoshi Murayama is MacAdams Professor of Physics at University of California, Berkeley, and Senior Staff at Lawrence Berkeley National Laboratory. He received his Ph.D. from the University of Tokyo in 1991, and has been in the United States since 1993. His wife and three children live near Berkeley.

For more information:
IPMU: http://www.ipmu.jp
WPI program: http://www.jsps.go.jp/english/e-toplevel/index.html
The University of Tokyo: http://www.u-tokyo.ac.jp/index_e.html