## ENCOURAGE WOMEN TO RESEARCH

# The Tachibana Award

For Most Outstanding Female Researchers



The Tachibana Award Ceremony was held on 3 March 2015\*. Each recipient received an award certificate and plaque from Juichi Yamagiwa, the president of Kyoto University, as well as an extra prize from Hironobu Yasuhara, the president of the Wacoal Corporation. Following the ceremony, the awardees, Dr. Yukiko Uchida and Ms. Megumi Shidatsu gave the presentations on their research. \*The day of the Doll Festival, which is a traditional Japanese event to pray for young girls' growth and happiness.

The Tachibana Award for the Most Outstanding Female Researcher was established in 2008 to acknowledge the excellent research achievements of young female researchers at Kyoto University. By publicly honoring young female researchers for their outstanding work in the humanities, social sciences, and natural sciences, the Tachibana Award aims to further motivate not only the awardees themselves, but also other young female researchers following in their footsteps, thereby helping cultivate accomplished female researchers who will lead the future of academic research at Kyoto University and in Japan as a whole.

#### 2015 TACHIBANA AWARD LAUREATE : STAFF

## What is happiness in Japanese culture?

The effects of interdependence and social capital on happiness.

As a cultural psychologist, I have been engaged in cross-cultural investigations on happiness and social relationships. Specifically, I am interested in how people achieve subjective well-being and how cultural values affect this process. The evidence I have obtained so far suggests that in Japan, compared with North American or European cultures, the source of happiness is more likely to be connected with social relationships and social capital within a society. Based on these findings, I further investigate how social capital functions within communities. From large social



Dr. Uchida visiting a farm in Ehime prefecture



survey studies and fieldwork in agricultural and fishing communities in Japan, my colleagues and I are examining which environmental and cultural effects support happiness in communities at both the individual and the group level. From such investigations, I would like to propose an index of "collective well-being" which can be applied to assess the sustainability of happiness.

Yukiko Uchida, PhD Assistant Professor, KOKORO Research Center kokoro.kyoto-u.ac.jp/en/cultureko\_net/ kokoro.kyoto-u.ac.jp/en/staff-en/2011/02/yukiko\_uchida.html

#### 2015 TACHIBANA AWARD LAUREATE : STUDENT

# Black Holes: Monsters in the Universe

Understanding powerful activities in extremely strong gravitational fields.

Black holes are exotic objects whose gravitational field is so strong that nothing, not even light, can escape from them. Surprisingly, black holes not only swallow matter, but also eject jets of highly energetic particles at nearly the speed of light. What drives such powerful jets? This has been one of the biggest mysteries in astronomy. Recent studies suggest that the black-hole jets have significant impact on galaxy formation and play a key role in the evolution of the universe. My collaborators and I have been observing the emissions from the gas falling onto and

mechanism of the jets and to understand the cosmic history.

ejected from black holes, using X-ray satellites together with ground-based optical and infrared telescopes. Our main goals are to reveal the physical



Highly collimated jets and a rotating disk of in-falling gas formed around a black hole



#### Megumi Shidatsu

PhD Candidate, Graduate School of Science / Research Fellow of the Japan Society for the Promotion of Science www.kusastro.kyoto-u.ac.jp/~shidatsu/

2015 HONORABLE MENTION AWARD: STAFF

## Explosions on the Sun

🖥 Understanding Solar Flares and Flare-associated Ejections.

Solar flares-explosions occurring on the solar corona emit intense radiation over a wide range of wavelengths, and often eject a tremendous amount of plasma into space. They sometimes produce serious effects on the environmental conditions of the Sun-Earth system, such as geomagnetic storms. Understanding their energy release mechanism is crucially important. I have advanced our understanding





of the mechanism of energy release in solar flares and the traveling processes of flare-associated ejections in space by analyzing a number of observed data and successfully combining them. To achieve

analyzing a number of observed data and successfully combining them. To achieve this, I analyzed the data without prejudice, and promoted constructive exchange with researchers in related fields.

Ayumi Asai, PhD Associate Professor, Unit of Synergetic Studies for Space www.usss.kyoto-u.ac.jp/e/index-e.html

2015 HONORABLE MENTION AWARD: STAFF

## **Tissue Growth Regulation through Cell-Cell Communications**

Mitochondrial dysfunction drives tumor progression through cell-cell communications.

### Mitochondrial dysfunction + Ras activation



There is growing evidence to suggest that tumor progression may be caused by cell-cell communications. In developing *Drosophila* epithelium, I found that mitochondrial dysfunction cooperates with oncogenic Ras to drive tumor progression through cell-cell communications. Cells

with mitochondrial dysfunction and Ras activation express secretory growth factors Upd (IL-6 homolog) and Wingless (Wnt homolog), which trigger tumor progression in neighboring benign tumors activating Ras. Interestingly, mitochondrial dysfunction is often observed in human cancers. I have therefore concluded that similar mechanisms could contribute to tumor progression in human cancers.



Shizue Ohsawa, PhD Lecturer, Graduate School of Biostudies www.lif.kyoto-u.ac.jp/e/?post\_type=labos&p=192