

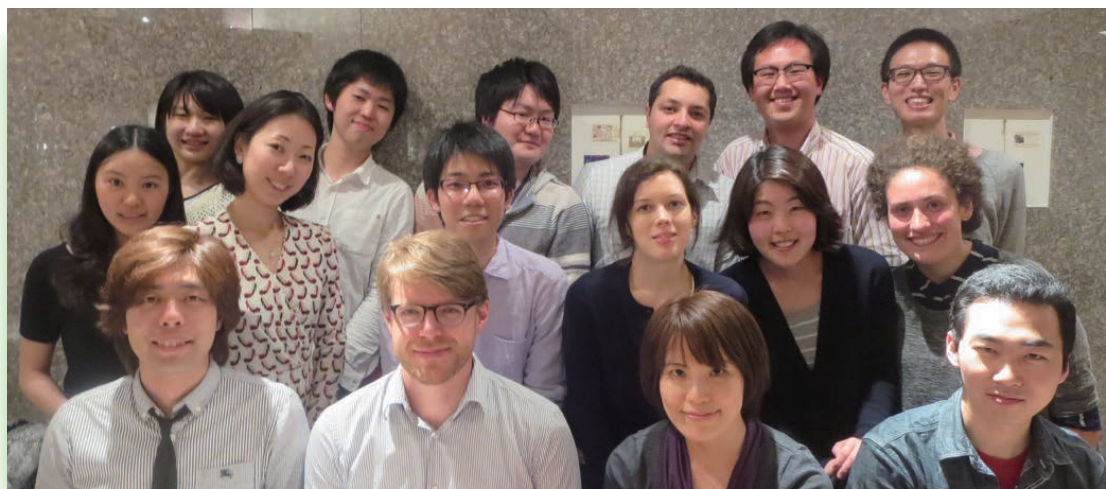
INTERNATIONAL JOINT RESEARCH

# Sprawling Kokoro Research Network Around the Globe

CUL-PSY

## Knowing Culture, Knowing the Mind

*Psychological research on how culture and the mind work together.*



Cultural-Kokoro Network (Culture-KoNet) represents an international collection of cultural psychologists and social scientists who are pursuing questions related to culture. Researchers at Culture-KoNet study how culture and the mind work together. Researchers (including graduate students) are engaged in empirical research in cultural psychology to investigate how cultural settings shape people's emotions, cognitions, motivations and relationships, and how these in turn shape the culture from which they emerged. In addition to conducting research, we also act as a liaison and as a research base for

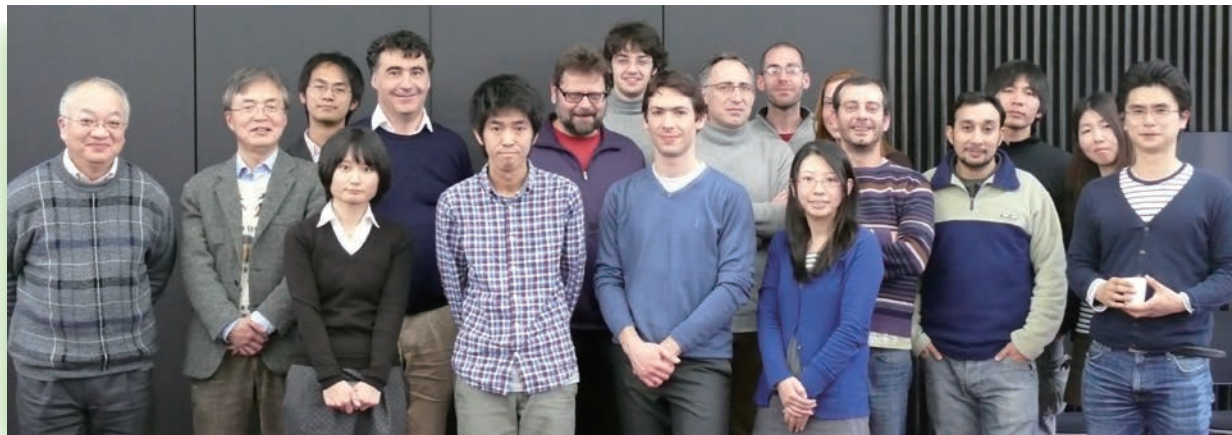
researchers from around the world to collaborate during both short and long-term visits in Kyoto. We work together on both basic research and applied problem-solving related to the interaction of culture and the mind.



WEB [kokoro.kyoto-u.ac.jp/en/cultureko\\_net/index.html](http://kokoro.kyoto-u.ac.jp/en/cultureko_net/index.html)

## Developing a New Model for Working Memory

*Synaptic plasticity and the importance of balance between excitation and inhibition.*



Working memory (WM) is the central function for adaptive and intelligent behavior. Electrophysiological evidence supports the notion that the WM involves a self-sustained activation of a neural population in a dedicated cortical network. Despite extensive investigations, the mechanisms by which WM networks stay in an active state are not yet fully understood. The goal of this joint research project was to present and validate a new theoretical framework to account for WM mechanisms. The working hypotheses were that: (1) temporal irregularity and diversity of spiking patterns of neuronal activity are significant features and (2) short-term synaptic plasticity plays a primary role for keeping the WM

network in an active state. We anticipate that the results of our research could significantly advance our knowledge of the computational underlying of WM function and the patterns of neuronal activity that support it. The research was undertaken through interdisciplinary collaboration between a group of experimentalists at Kyoto University (led by Prof. Shintaro Funahashi) and a group of theoreticians at Paris Descartes University (led by Prof. David Hansel). The research, which was undertaken in two periods from 2010-2012 and from 2013-2015, was supported by the Japan Society for the Promotion of Science (JSPS) and the French National Centre for Scientific Research (CNRS).

### The Inamori Foundation Memorial Building



The Kokoro Research Center is located in the Inamori Foundation Memorial Building on the east side of the Kamo River. The Kyoto Prize Library, which is dedicated to providing information and exhibits about the Kyoto Prize and the Research Resource Archive Audio-Visual Station, which provides multimedia information on Kyoto University's education and research activities, are located on the building's first floor, and are open to the general public. The building was donated to Kyoto University by the Inamori Foundation in 2011.

Painter: **Kiyoko Yamaguchi, PhD**

Alumnae of Kyoto University [kiyoko-yamaguchi.com/](http://kiyoko-yamaguchi.com/)

