

Foreword

Neural Coding (NC) workshops are traditionally biennial symposia lasting for about 6 days. They are comparatively small in scale but highly inter- and trans-disciplinary with major emphasis on the search for common principles in neural coding, without neglecting functionally relevant differences between systems and across system levels. Previous workshops took place first in Prague, Czech Republic (NC1995), followed by others in Versailles, France (NC1997), Osaka, Japan (NC1999), Plymouth, UK (NC2001), Aulla, Italy (NC2003), Marburg, Germany (NC2005), Montevideo, Uruguay (NC2007) and Tainan, Taiwan (NC2009).

Papers in this special issue (including 4 invited contributions/mini-reviews) are selected works presented at the NC2009 meeting held in Taiwan, the second NC workshop being held in Asia.

The goal of the NC workshops is to bring together neuroscientists from different fields so that a multidisciplinary approach could improve the understanding of mechanisms in neural coding and their disturbances. Hence, the attendees at the workshops are expected to cross borders of their own discipline. Participants are encouraged to integrate findings from various functional levels, including sub-cellular, single-neuron, neuronal network and system levels, and to discuss the interdependency across levels and the implication on sensation, cognition, and autonomous control. Intense and controversial discussion is often common, with participants addressing the most promising experimental, modeling and analytical approaches, and the possibilities of combining these for a better understanding of neural coding, and origin or treatment of neurological disorders. Emphasis is given to biologically inspired computer models, in an attempt to elucidate functionally relevant dynamics of coding mechanisms.

To meet these objectives, this workshop was kept small in size, and with single-track activities. NC2009 had 33 posters presentations in 2 stand-by sessions (each poster with additional 5 min podium briefing) and 19 oral presentations. We also programmed ample time for informal discussion in a convivial atmosphere, encouraging intense debates. The program allowed discussions continue through diverse social and cultural events as an integral part of the workshop. Other information of the meeting (including conference photographs) can be found at the NC2009 website at <http://conf.ncku.edu.tw/nc2009/>.

NC2009 has gathered 120 attendees from 13 countries outside Taiwan, including 60 students (mainly from the host region). Four overseas students were supported by travel fellowships. This gave good opportunity for integrating the international experts of the field with a small but very valuable community of young scientists.

To increase the impact, NC2009 was further organized in proximity with a one-day satellite symposium on Neuroengineering at the National Chiao Tung University, in the north Taiwan. A number of NC2009 participants attended the satellite meeting.

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