

2016 International Conference of Physiological Sciences Meeting

Summary

The International Conference of Physiological Sciences met in Beijing, China from September 25-28, 2016. The Chinese Association for Physiological Sciences (CAPS) hosted the meeting, which attracted almost 1,000 participants. The PsychoNeuroImmunology Research Society (PNIRS) was welcomed and received front-page billing with ten other major international physiological societies. PNIRS Past-President Keith W. Kelley (1999) presented a lecture on PNIRS, PNIRS^{China} and *Brain, Behavior, and Immunity*. The next day, the PNIRS-sponsored symposium entitled, "The Physiology of Immunology", was co-chaired by Professor Yuhui Yuan from Dalian Medical University and Professor Keith W. Kelley from the University of Illinois. Three PNIRS Past-Presidents presented lectures at the meeting: Professor Cobi Heijnen (2005), Professor Rodney Johnson (2013) and Professor Annemieke Kavelaars (2015). Professor Yu-Ping Peng of Nantong University and Professor Ning Quan of The Ohio State University rounded out the speakers at the symposium. All five lectures were outstanding, with the speakers representing PNIRS very well. Around 110 attendees participated in the *BBI*/PNIRS workshop and 120 participants attended the symposium. At the *BBI*/PNIRS workshop, 200 pens engraved with the *BBI* website and 40 hard copies of 2016 issues of *BBI* were given to attendees. All the speakers and other honored guests, including PNIRS Executive Director Susan Solomon, enjoyed a wonderful evening at a dinner hosted by Professor Kelley. They discussed science, life in China and the USA and dined on a specialty dish in Beijing, Peking Duck. A special thank you goes to Professor Jian-Jun Wang at Nanjing University for organizing this special dinner. As a group, PNIRS met its goal of sharing the cutting-edge science that is being conducted by members of PNIRS and published in *BBI*. Hopefully, international scientific conferences like this one in Beijing will stimulate and propel further growth in PNIRS^{China} as well as other PNIRS affiliates around the world.





Peking Duck dinner attendees:

First Row: Yu-Ping Peng, Ning Quan, Keith W. Kelley, Jian-Jun Wang and Cobi Heijnen
Second Row: Ao-Wang Qiu, Susan Solomon, Li Tian, Annemieke Kavellars, Rodney Johnson, Chun-Lei Jiang and
Jing-Ning Zhu

**BRIDGING THE BRAIN AND THE IMMUNE SYSTEM, MIND AND BODY, WEST AND EAST: BRAIN-IMMUNE
INTERACTION MEETING SUMMARY
ZHANJIANG, CHINA (OCTOBER 27-29, 2016)**

Zhanjiang, China recently hosted an international symposium co-organized by the International Stress and Behavior Society (ISBS), the PNIRS, the Mind-Body Interface Laboratory (MBI-Lab, Taiwan region) and Research Institute for Marine Drugs and Nutrition (RIMND, China). The meeting attracted over 150 delegates from 15 countries and was sponsored by Guangdong Ocean University (GDOU).

Plenary lectures included talks on brain and metabolic diseases (Brian Leonard, Ireland), diet and addiction (J. Hibbeln, USA), kynurenic pathways in inflammation and depression (A. Halaris, USA), gene-environment interactions in psychoses (Misha Pletnikov, USA), trace amine neurobiology (R. Gainetdinov, Russia), mouse age-related cognitive phenotypes (R. Brown, Canada) and pro-inflammatory cytokines in cognitive deficits in rodents (Victor Klimenko, Russia).

Opening the PNIRS session on Day 1 of the conference, Keith Kelley (USA) provided a historical background of PNIRS research and noted the importance of establishing PNIRS^{China} and the pivotal role of *Brain, Behavior, and Immunity* in stimulating psychoneuroimmunology research. Chris Coe (USA) discussed new findings on the gut-brain axis and the developmental role of the microbiome. Sarah Spencer (Australia) addressed the impact of obesity and diet on inflammatory processes that occur via microglial activation. Yun-Xia Wang (China) took a molecular approach, investigating how inflammatory mediators impact the brain, as well as the ways that neutralizing these pathways (e.g., HMGB1) can ameliorate the adverse effects of the TLR4, RAGE and CXCR4 cascade. Understanding the neurobiology and immunobiology underlying depression was further elaborated upon by Suzi Hong (USA), discussing how sophisticated immunophenotyping now enables scientists to identify numerous cell subsets and assess the influence of neuroendocrine mediators on monocyte and lymphocyte trafficking. The translational relevance to psychiatric conditions was also emphasized by J-K Yao (USA), summarizing angiogenic and immune bio-indicators of risks of psychoses.

The MBI-Lab-organized the Mind-Body Interface symposium provided new insights into nutritional research in neuroscience. K-P Su (Taiwan region) discussed personalized medicine with omega-3 fatty acids in depression, and C-C Chiu (Taiwan region) summarized the effects of n-3 poly-unsaturated fatty acids on cognitive function in patients with late-life depression. K. Aitchison (UK) evaluated the association between a functional variant in a gene encoding an enzyme metabolizing dopamine and post-cannabis psychosis, and R. Bazinet (Canada) spoke on how fatty acids that are present or not in the brain may help target CNS deficits. L-Y Sheen (Taiwan region) discussed anti-depressant-like effects of *Gastrodia elata* in rats and H-M Su talked on how exposure to a maternal n-3 fatty acid-deficient diet alters hypothalamic-pituitary-adrenal axis responses to stress in rat offspring. Finally, Cai Song (China) presented data on the neuroprotective effects of omega-3 fatty acids on behavior and microglial-mediated neuroinflammation.

Held on Day 3 of the meeting, the 1st Symposium on Marine Drugs and Nutrition focused on research progress in screening and development of marine and related drugs and how drugs and nutrients of marine origin can modulate the brain-endocrine-immune axis. Cai Song (China) introduced different roles of microglia and astrocytes in depression, emphasizing the interactions between glial cells during chronic stress, peripheral inflammation and anxiety. R. Guo (China) presented novel data on mitochondrial metabolism in the hippocampus and skeletal muscle of depressive rats and the regulatory mechanism of traditional Chinese medicine. S. Grond (Germany) outlined chemical analyses from ecological niches to microbial bioactive agents as biochemical tools for drug development. The importance of the chemical diversity of bioactive natural products was extended further by B. Wang (China), covering chemical diversity of bioactive natural products from marine-derived endophytic fungi. The significance of natural products in brain disease was also addressed by X-F Huang (Australia), and Y. Zhang, Wei Ji, R. Tao, J.J. Chen and D. Xu (China). The final lecture was given by ISBS President, Allan V. Kalueff (China, Russia), who discussed zebrafish models of neuropsychiatric and comorbid disorders and their potential for genetic/small molecule screening and CNS drug discovery.

Collectively, this conference was a great success, highlighting the many recent advances being made in the field and how this new knowledge can be applied to promote inter-disciplinary science, health and psychological well-being throughout the world. The event was so successful that discussions have already begun about the possibility of organizing another joint meeting in the fall of 2018 in Taipei, Taiwan region.

Christopher Coe, University of Wisconsin Madison, USA
Allan V. Kalueff, St. Petersburg State University, Russia
Keith W. Kelley, University of Illinois at Urbana-Champaign, USA
Cai Song, Guangdong Ocean University, China
Kuan-Pin Su, China Medical University and Hospital, Taichung, Taiwan region

