5th Congress of Federation of Asian-Oceanian Neuroscience Societies and XXVIII Annual Conference of Indian Academy of Neuroscience

November 25-28, 2010, Lucknow, INDIA

Report and Recommendations

The 5th Congress of Federation of Asian-Oceanian Neuroscience Societies (FAONS) hosted by the Indian Academy of Neurosciences (IAN) was held along with its XXVIII annual conference at Lucknow from November 25–28, 2010. With the theme **Emerging Trends in Basic and Clinical Neurosciences**, the neuroscience event first of its kind to be organized in the country provided the current status of research in basic and clinical neurosciences, new information on brain development, mechanisms involved in the development of neurodegenerative disorders and ageing as well as advances in neurodiagnostics, neuroimaging, neurogenetics and neuroinformatics and their applications in basic and clinical research and treatment. This neuroscience event also led to identification of areas for collaboration in the Asian-Oceanian region and the capabilities and expertise to be further developed in the country. The event was attended by around 500 delegates predominantly from Asian-Oceanian region as well as neuroscientists from Australia, Canada, France, Germany, Ireland, New Zealand, South Africa, UK and USA.

The Department of Biotechnology (DBT), New Delhi was the major sponsor of this neuroscience meet and provided great support in the organization of this international event. The Congress was also supported by International Brain Research Organization (IBRO), Federation of Asian-Oceanian Neuroscience Societies (FAONS) and other science ministries and organizations of the country including Council of Scientific and Industrial Research (CSIR), New Delhi; Indian Council of Medical Research (ICMR), New Delhi; Indian Academy of Neurosciences (IAN); The National Academy of Sciences, India (NASI), Allahabad and local institutions.

The venue of the conference was centrally located Hotel Clarks Avadh, Lucknow which provided excellent conference facilities to run several scientific sessions concurrently. The neuroscience event started with two important annual award sessions of Indian Academy of Neurosciences for the young neuroscientists - Tulsabai Somani Educational Trust Award and Dr. DM Kar Prize in the morning on November 25, 2010. There were five presentations in each session by promising young researchers of the country who shared their original findings. The morning session was attended by over 300 delegates.

Dr. Rakesh Shukla, President, IAN and Professor, Department of Neurology, CSMMU, Lucknow in his welcome address said that this is the best time to organize a conference of this magnitude in the field of neuroscience when great advancements are being made globally. A brief but colourful inaugural function was held in the magnificent auditorium of Indira Gandhi Prathisthan, Lucknow. This included a welcome dance depicting various states of India. The delegates were also apprised of the *Neuroscience activities being pursued in Lucknow and the country* briefly. The foreign scientists & researchers were also acquainted with the traditional culture of *Lucknow, A City of Nawabs*.

The main attraction of the inaugural function was Distinguished Lecture entitled The role of nature and nurture in the development of vision by the neuroscientist Nobel Laureate Dr. Torsten N. Wiesel, Rockfeller University, USA. In a lucid manner, he explained the central visual pathways and image formation in the brain with his pioneering experiments on cats which laid the foundation for the neuronal basis of perception in visual system. An audience of over 500 people was present through out the lecture. The Distinguished Lecture was followed by B.K Bachhawat Memorial Life Time Achievement Award Lecture on Probing the neurobiology of depression and suicide: An integrated biological model, delivered by Professor GN Pandey, University of Illinois, Chicago, USA. Professor Pandey explained the abnormalities in various proteins and neurometabolites in the brain in clinical subjects of depression and the risk factors involved in the suicidal cases. His meticulous work involved detailed mechanistic studies using postmortem samples of human brain and other changes in behavior pattern of depressed humans which are more prone to suicidal tendencies. Delivering the Second KT Shetty Memorial Oration, Professor US Bhalla, National Centre for Biological Sciences, Bangaluru, India discussed his novel findings on tracking odorant trails in mammals. Professor Bhalla elegantly discussed how brain integrates sensory inputs, cognitive processes of path prediction and rapid motor control of timing and position of sampling.

The scientific programme which started from the morning of the first day continued till noon of the fourth day. A total of six plenary lectures, fourteen invited lectures and fourteen symposia on focused theme were organized. Apart from this, eight oral sessions, two technical lectures and two poster sessions were also held. Besides this, an interactive meet for young researchers with Professor TN Wiesel, Nobel Laureate, Rockefeller University, USA was arranged at Central Drug Research Institute, Lucknow on November 26, 2010. Around 150 young researchers and Postdoctoral Fellows from local research institutions and medical colleges (Central Drug Research Institute, Indian Institute of Toxicology Research, Sanjay Gandhi Postgraduate Institute of Medical Sciences (SGPGIMS), Chattrapati Shahuji Maharaj Medical University etc.) participated. The invitee participants also included recipients of INSA and NASI Young Scientist Medal Award Winners, CSIR Young Scientist and SS Bhatnagar Awardees. During discussions, the researchers shared their research highlights and enquired about future prospects of staying in science. Professor Wiesel said that the ***Science should be pursued as a hobby and as a passion***. He opined that the area of science requires very passionate researchers and equated scientists with musicians. He

had an opinion that musicians are naturally talented people and they only need to polish their skills, which is applicable in science too.

Another important activity was the visit of eminent neuroscientists to local schools. Professor PR Dodd, Australia; Professor M Belmonte, USA and Professor GB Baker, USA visited the Regional Science City, Lucknow on November 27, 2010 and interacted with about 400 students from different schools and colleges of the city. They also distributed prizes to the winners of painting competition organized during this time. In another programme, Professor SA Dunlop, Australia; Professor EL Scarr, Australia; Professor S Duan, China; Professor AJ Greenshaw, Canada and Professor M Belmonte, USA visited City Montessori School (CMS), Gomti Nagar and Pioneer Montessori Intermediate College (PMIC), Vikas Nagar and interacted with about 350 students at CMS and about 200 students at PMIC. The students were inquisitive and asked questions about the future prospects in neuroscience and were answered by the expert neuroscientists. They were impressed with the depth of the knowledge of the students and wished Good Luck to the young students for their future endeavors. A visit for the young overseas participants was also arranged to see the NMR and telemedicine facilities at SGPGIMS, Lucknow which was an exciting experience for them. An interactive meet of NASI Fellows and members with the Chinese delegates was also organized to discuss research areas of mutual interest.

The Plenary lectures were highly informative and well attended. Dr. V Ravindranath, India, explained the importance of natural products for treatment of Alzheimer's; Dr. S Duan, China discussed about glial cells and synaptic plasticity; Dr. S Tole, India spoke about an innovative approach for building the blueprint of brain; Dr. H Okamoto, Japan talked about Zebrafish as a model system for study of fear; Dr. YS Chan, Hong Kong discussed about plasticity of pattern formation in spatial recognition and Dr. SA Dunlop, Australia explained the phenomenon of neurotrauma and clinical trials for spinal cord injury.

Delivering Invited lectures, Dr. GB Becker, Canada discussed about Amine oxidase inhibitors as neuro-protective agents and highlighted the role of monoamine oxidase inhibitors as neuroprotective agents; Dr. C Kaur, Singapore spoke on Role of microglia in neuronal damage in the hypoxic developing retina and functioning of astrocytes; Dr. R deSilva, Sri Lanka talked about Ceylon green tea in the prevention of stroke and Professor M Hasan, India elaborated about the importance and therapeutic potentials of *Bacopa monniera* in aluminum neurotoxicity; Professor RD Mehra, India highlighted use of selective estrogen receptor modulator (SERM) as alternate therapy to estrogen for augmenting the beneficial estrogenic effects in brain. Dr. A Gulati, USA spoke about the usefulness of endothelin receptor antagonists in Alzheimer's disease while Dr. CD Dwivedi, USA discussed about brain cholinergic mechanisms in ventral striatum and its implication for alcohol dependence. His findings suggested that lobeline and cysteine modulate ethanol induced DA function by targeting nAChRs in ventral striatum indicating an important role of brain cholinergic mechanisms in maintaining alcohol drinking behavior. Dr. ST Dheen, Singapore discussed epigenetic modifications in mouse embryonic neural stem cells (NSCs) exposed to different glucose concentrations and hypothesized that high or low glucose activates these epigenetic mechanisms in NSCs resulting in altered gene expression leading to malformations and impaired brain functions. Dr. A Greenshaw, Canada discussed role of serotonin and concluded that increasing availability of drugs which are pharmacologically selective for individual receptor subtypes have led to rapid advancements in our understanding of serotonin systems. Professor MM Godbole, India talked about the maternal thyroid hormone which regulates molecular cues and governs early fetal neocortical neuronal migration. Dr. C Kulkarni, India spoke on scientific basis of drug dependence towards target oriented pharmacotherapeutic options. In her presentation, she discussed the recent advances in etiopathogenesis of drug dependence including the past, present and futuristic treatment options. The invited lecture by Dr. SY Hun, Korea was focused on S100A9 knockdown and how knockout attenuates the learning and memory impairment and the neuropathology in tg2576 mice. Professor YK Gupta, India presented his work on Potential of Indian herbal drugs for Alzheimer's disease and discussed the role of aqueous extracts of *Centella asiatica* and *Celantrus peniculatus* in Alzheimer's disease. Dr. UK Misra, India presented an overview on Japanese encephalitis (JE), identified as an endemic common in certain parts of India and some other regions of the developing world. Discussing the clinical symptoms of JE, Dr. Misra said in the absence of specific antiviral therapy, JE is managed by symptomatic and supportive therapies. He also elaborated promising role of Chimeric recombinant and its beneficial effects in the management.

The symposia held in parallel in morning and afternoon session were highly focused and provided the current advances in the subject area. In the symposium on Alcohol and brain: Have we learned anything new? (convened by Dr. R Sircar, USA), Dr. PR Dodd, Australia presented an interesting talk on Problem at the call centre: Synaptic machinery in human alcoholism. Dr. A Stadlin, South Korea presented data on alcohol craving and association with genotype-phenotype interaction which was studied using a set of molecular techniques for transcripts and protein expression on human autopsy brain. Dr. S Kapur, India talked about 17T and 118G alleles of OPRM1 Gene which could act as a potential marker for susceptibility to alcohol dependence. Dr. R Sircar, USA in her talk on Adolescent alcohol blackouts: Some insights from animal atudies found that NMDA receptor gated ion channels are important target for the acute and chronic effects of alcohol associated with impaired acquisition of spatial memory in adolescent rats.

The symposium on Recent advances in neuroprotective strategies for neurological disorders (convened by Dr. I Singh, USA) attracted many listeners. Dr. I Singh, USA talked about the Rho GTPase mediated mechanisms in neuroprotection / neurorepair and highlighted that Rho-A family GTPases participate in the immunomodulatory and myelin repair activities of statins. Dr. M Jatana, India discussed about Amelioration by nitrosylation of neuroinflammatory brain injury and concluded that s-nitrosoglutathione (GNSO) protects against traumatic brain injury and dementia by blocking the vicious eNOS / peroxynitrite cycle via nitrosylation in rats. Dr. R Sandhir, India talked about Pathological mechanisms involved in diabetic encephalopathy and observed that oral supplementation of N-acetyl cysteine could be a potential therapeutic strategy for the treatment of diabetes induced CNS dysfunctions. Dr. M Khan, USA discussed eNOSmediated mechanisms in vascular protection in stroke through drugs which

increases the blood circulation in the body and the brain. Dr. AK Singh, USA in her presentation discussed neurodegenerative mechanisms in Krabbe disease, an inherited neurological disorder caused by deficiency of galactocerebrosidase activity resulting in accumulation of psychosine and leading to energy depletion and inflammatory degeneration of CNS.

The symposium entitled Role of micronutrients in cognition and brain functions (convened by ILSI, India) witnessed some magnificent lectures. Dr. T Gera, India presented a review on Effect of multiple micronutrient supplementation on cognition in children. Followed by this, Dr. K Srinivasan, India elegantly discussed role of imaging techniques to measure structural and functional changes of the brain in nutrition intervention trials. Dr. S Ganguly, India in his interesting presentation on LCPUFAS in cognition: Do they have a role? illustrated that long chain polyunsaturated fatty acids (LCPUFAS) supplementation was found to enhance brain and vision development in infants with regard to better cognition, visual acuity and higher IQ. Dr. JK Tiwari, India spoke on Functional foods for brain – Brain health and mental acuity of elderly and discussed that dietary actives like soy isoflavones prevent cognitive decline in elderly.

The symposium on Neurodegeneration: Role of stress and natural remedies (convened by Dr. R Wadhwa, Japan and G Kaur, India) focused particularly on areas pertaining to utilization of natural products for nervous system disorders. Dr. R Wadhwa, Japan discussed the role of mortalin in neurodegeneration and cancer. Dr. M Kojima, Japan described role of BDNF in modulating synaptic plasticity and suggested that it could be a target molecule for drug development in brain disorders. Dr. S Kaul, Japan in his interesting lecture on Ashawagandha leaf derived factors for age diseases emphasized that Ashawagandha leaf extract has the potential to protect chemical induced Parkinsonism in mouse model and other age related neurodegenerative diseases. In continuation to his lecture, Dr. G Kaur, India discussed antioxidant potential of Ashawagandha leaf extract and its ability to ameliorate lead toxicity *in vitro* and *in vivo* on rats.

In the symposium on Brain development and plasticity (convened by Dr. S. Tole, India and SS Tan, Australia), Dr. S Mani, India explained how cell proliferation in external granular layer of mouse cerebellum can be regulated? Dr. M Fumio, Japan emphasized the role of neuronal stem cells in developing brain. Dr. J Parnaveles, UK discussed about the mechanism involved in generation of cortical interneurons. Dr. S Tole, India delivered an interesting talk on Amygdala offers an evo-devo link to the cerebral cortex. Dr. SS Tan, Australia, presented his finding on the Role of Reelin in controlling cortical neuron migration and layering.

In the symposium entitled Neuronal stem cells – Potential and challenges (convened by Dr. P Seth, India), Dr. DKY Shun, Hong Kong while presenting her work on Directed differentiation of bone marrow stromal cell to fate commitment of schwann cells for remyelination therapy explained therapeutic utility of bone marrow derived schwann cells in post-traumatic nerve regeneration. Dr. P Seth, India in his talk on Human fetal brain derived neural stem cell - An *in vitro* model explained that human neuro precursor cells (hNPCs) are a novel *in vitro* tool to understand the neurobiology of undifferentiated as well as differentiating glia or neuronal cells. In continuation to this, Dr. G Dave, Singapore elaborated the role of immunoglobulin superfamily molecules and neural stem cells and their applications in CNS repair. Dr. V Jayagopalan, France presented her work on Restoring adult neurogenesis in diseased brain: Implications for cognitive recovery and highlighted that neuroinflammation is intimately associated with neurodegeneration and stress may severely affect the hippocampal neurogenesis.

In the symposium on Neural circuit: Development and plasticity (convened by YS Chan, Hong Kong), Dr. S Tomomi, Japan talked about Molecular mechanism of circuit formation of thalamocortical pathway and discussed formation of activity-dependent and activity-independent neuronal circuits in mouse. Dr. Y Wing-Ho, Hong Kong discussed about Permissive role of Insulin in the expression of long-term potentiation (LTP) in the hippocampus of immature rats. He explained role of insulin as an essential factor in the developing brain leading to the expression of LTP to facilitate learning and memory. Dr. Y Kazuhiko, Japan presented his work on AMPA-Receptor trafficking in cerebellar purkinje cell: A kinetic analysis where in he estimated a rate-constant of endocytic elimination of AMPA-R from the synaptic membrane using a caged inhibitory peptide (pepR845A) that blocked AMPA-R's exocytic insertion into synaptic membrane. Dr. S Wadhwa, India presented her work on Activity dependent cellular and molecular plasticity in the chick hippocampus following prenatal sound stimulation. Her interesting studies showed that sound stimuli produced differential changes and indicated that the characteristics of sound are important in mediating the plasticity and learning involving calcium binding protein and CREB mRNA.

The symposium entitled Molecular mechanism for depression and suicide (convened by Dr. GN Pandey, USA) had interesting papers. Dr. GN Pandey, USA spoke on the Role of protein kinase C in depression and suicide. His studies on postmortem brain samples of clinical cases of depression and suicide speculated possible involvement of protein kinase C and its isoforms in the pathophysiology of suicide and mood disorders. Dr. Y Dwivedi, USA discussed the Regulation of BDNF gene and its implications in suicidal behavior. His studies demonstrated decrease in the expression of BDNF due to decreased expression of specific BDNF exon II and IV. He further showed that calcium mediated CaRF plays a crucial role in regulating expression of BDNF exon promoter IV. Dr. E Scarr, Australia in her lucid talk on Suicide in psychiatric disorders: What does the brain tell us? stressed on to implore involvement of mu opioid receptors, glutamatergic ionotropic receptors and muscarinic receptors in suicide and psychiatric disorders. Dr. SC Tiwari, India in his presentation on Geriatric depression, showed a clinical correlation with the age old depression with fronto-striatal dysfunction. His studies not only included epidemiological and etiological observations of geriatric depression but also touched upon various specific methods to treat it.

In the symposium entitled Environmental factors in learning and memory (convened by Dr. LT Rao, India), Dr. S Mara, Ireland delivered lecture on Parallel anatomical and neurophysiological approaches to brain circuits supporting episodic memory function: The extended hippocampal formation. She reported parallel temporal diencephalic pathways which function in a reciprocal manner both directly and indirectly. Dr. T Seidenbecher, Germany presented his work on Patterns of theta synchronization in amygdala-hippocampal-prefrontal cortical network during fear memory consolidation and extinc-

tion. His study suggested that directed theta oscillations may play a central role in spatiotemporal co-ordination of populations of cells in LA, CA1 and mPFC, possibly via tight amplitude correlations during consolidation. Dr. BM Kutty, India talked about the Environment, trophic factors and adult brain plasticity: Implications in functional recovery. Her studies showed that recovery is task dependent and appropriate environmental stimulation is needed to establish recovery of distinct cognitive tasks. Dr. LT Rao, India spoke on Early life stress: Neural activities of the prefrontal-limbic circuits during emotional behavior. She pointed out that even though the brain is plastic and adaptable in modifying the behavior for survival in a changing environment, the maternal separation stress during neonatal days leave significant impact on the neural development in the genesis of anxiety by altering prefrontal-limbic circuits during adulthood.

In the symposium on Molecular Basis of Neurodegeneration (convened by Dr. KP Mohanakumar, India), Dr. J. Geddes, USA spoke on Mechanism of neurodegeneration following spinal cord injury. Dr. AMA Namboodiri, USA presented his work on Acetate supplementation as a therapeutic strategy for Canavan disease (CD). His study showed that the acetate deficiency in CD might negatively affect histone acetylation and endoplasmic reticulum protein acetylation reactions leading to additional neurodevelopmental pathologies associated with disrupted cellular differentiation and maturation of oligodendrocytes. Dr. S. Ganesh, India talked on Molecular pathology of Lafora disease. His studies on cellular and animal models of Lafora disease found two novel players, laforin and malin proteins in the proteolytic pathways and demonstrated that loss of either malin or laforin resulted in a similar clinical phenotype.

Evening session witnessed another symposium on Pathophysiology and treatment of animal model of brain injury and degenerative diseases (convened by Dr. I Tadashi, Japan), Dr. TM Gao, China presented his work on a novel therapeutic target for strokeopening L-type calcium channel. His interesting findings suggested that ischemiainduced inhibition of L-type calcium currents may give rise to delayed death of neurons in the CA1 region. Dr. A Nambu, Japan gave a talk on Dynamics of the basal ganglia in movement disorders and highlighted that neurons in the GPi/SNr fire at high frequencies and continuously inhibit their target structures, the thalamus and cortex. It was suggested that imbalance among the hyper direct, direct and indirect pathways may be a cause of movement disorders. Dr. I Tadashi, Japan spoke on Recovery stage dependent reorganization of cerebral cortex after spinal cord injury and provided evidence that bilateral M1 and ventral pre-motor cortex change their contribution in functional recovery depending on the recovery stage associated with the change in expression of plasticity-related genes such as GAP-43. Dr. C Nath, India delivered an exciting talk on Intra-cerebroventricular administration of streptozotocin in rat: Memory impairment and hippocampal insulin receptors. Dr. SJM Skinner, New Zealand presented his work on Treatment of brain diseases with encapsulated living neonatal choroid plexus. His work with translational applications focused on micro-encapsulated living choroid plexus preparations implanted to treat diseases such as Parkinson's, Huntington's, traumatic brain and spinal injury and stroke (hypoxia/ischaemia) in rodent and non-human primate models.

On the last day of the conference, three symposia were scheduled. In the symposium on Synaptic plasticity and brain repair mechanisms (convened by Dr. BSS Rao, India), Dr. BSS Rao, India presented his work on Restoration of hippocampal long-term potentiation ameliorates stress-induced cognitive deficits. His experimental findings exhibited that the cholinergic muscarinic agonist, oxotremorine and dopaminergic D2 receptor agonist, bromocriptine and enriched environment restore stress-induced cognitive impairment. He also stressed on to understand the mechanisms of plasticity to develop novel therapeutic strategies for treating neurological and psychiatric disorders. Dr. IS Moon, Korea explained about the Postsynaptic machinery for synaptic plasticity and discussed that synaptic eEF1A1 may play an important role in morphological differentiation in the early developmental stage and spine remodeling in mature neurons. Dr. BN Srikumar, France discussed about changes in the NMDAR properties following LTP in the Mossy Fibre-CA3 synapse. Dr. RV Omkumar, India talked about Molecular memory by CaMKII. Dr. VR Bhagya, India discussed her work on Modulation of hippocampal long-term potentiation by antidepressants.

In another interesting symposium on Neuroimaginig (convened by Dr. PK Roy, India), Dr. MK Belmonte, UK spoke on Neuroimaging of brain-behaviour correlations within and beyond the autism spectrum: Common substrates for social and non-social cognitive skills. Dr. HW Park, Korea delivered an interesting talk on High-resolution imaging technique for fMRI and visualization of multimodal brain information. Dr. RK Gupta, India presented his work on Understanding epileptogenesis through advanced brain MRI in neurocysticercosis. Dr. K Cheng, Japan in his lecture on Visualizing columnar architectures using high-field fMRI discussed intricacies and applications in understanding fine architectures of brain.

The last symposium on Molecular dissection of brain diseases (convened by Dr. TJ Kilpatrick, Australia), was quite interesting and had focused presentations. Dr. TJ Kilpatrick, Australia spoke on Molecular pathogenesis of multiple sclerosis. Dr. SS Tan, Australia presented his work on Role of Ndfip1 in saving neurons from death following brain injury. Dr. SP Chandra, India spoke on Epileptogenesis and channelopathy. Dr. J. Howitt, Australia gave an interesting presentation on Regulation of metals within the brain and how to stop an iron overload. All the sessions were well attended, interactive with lively discussions and ran on time. It was quite encouraging that majority of the speakers from abroad and country delivered their talks except few drop outs which was because of not being able to get the VISA or some unforeseen reasons.

There was an overwhelming response in the poster sessions and young researchers from the country and overseas presented their work and interacted with the experts with great enthusiasm. Besides, a panel of experts also interacted with the researchers to select papers for two SS Parmar Research Foundation USA Prize, five Best Paper Awards From Organizers and five IBRO-APRC Alumni Award.

Basic and clinical researchers from 16 countries participated in this four day neuroscience meet. Young researchers from China-Hong Kong, France, Iran, Korea, New Zealand, Singapore, Sri Lanka, South Africa and India attended this neuroscience meet. One of the interesting features of the Congress was the participation of over 60 M.Sc. students from different

colleges and universities of the country. It was possible because of the generous support from DBT, New Delhi; CSIR, New Delhi; ICMR, New Delhi; IBRO; FAONS; IAN and NASI. Further, out of twenty six FAONS-APRC Travel Awardees, twenty awardees attended the Congress. The remaining six could not attend the congress for not being able to get the VISA.

In the valedictory session, Dr. VM Katoch, Secretary, Department of Health Sciences, Government of India and Director General, Indian Council of Medical Research, New Delhi was the Chief Guest. Dr. SA Dunlop, Australia and Dr. H Okamoto, Japan were the Guests of Honour.

Addressing the hall packed audience, Dr. Katoch said that increasing incidences of neurodegenerative disorders during the recent years is a matter of concern. As these diseases have a great burden on the society besides affecting the individual particular, he stressed on the need to focus research to unravel the mysteries of neurodegenerative disorders and utilize modern research tools for their management. He was impressed with the contents of the scientific schedule and congratulated the organizers for developing an interesting and pertinent programme. He appealed the researchers to join hands together irrespective of region and religion to solve the problems of the society.

It was a historical moment for the Indian Academy of Neurosciences to confer the Honorary Fellowship to neuroscientist, Nobel Laureate Dr. TN Wiesel, Rockfeller University, USA. Dr. VM Katoch and Dr. R Shukla gave away the prizes and awards to the winners. The valedictory session was well attended by the delegates and dignitaries. The event was adequately covered by print and electronic media and the conference concluded successfully with lasting memories engraved on the neurons.

Recommendations

1. Exchange programs for the exposure of young researchers / students to the modern neuroscience should be initiated in Asia-Pacific Region. This will help to build up capacity in neuroscience research in India and Asian-Oceanian region. The Department of Biotechnology, Ministry of Science and Technology, Government of India should institute at lease five Fellowships for Faculty and 10 for young researchers.
2. Workshops and hands on training courses should be run at regular intervals in India and the Asia-Pacific Region to train young researchers in identified areas. Indian Academy of Neurosciences may help in identifying centres / suitable faculty and candidates in the country and co-ordinate if required.
3. Basic and clinical research should be geared up on neurodegenerative disorders, particularly on Parkinson's disease and aging with focused aim to have translational impact for better quality of life in the society.
4. Role of gene-environment interaction in neurodegenerative diseases be studied. Multi-Centric projects in the country and international collaborative projects in the Asian-Oceanian region be developed (Participants from Japan, Sri Lanka, Australia, Singapore exhibited lot of enthusiasm for collaborative projects).
5. Both basic and clinical studies on the role of stress in brain related disorders and their management should be taken on priority.
6. Developmental neuroscience studies to further understand the intricacies involved in developmental disabilities should be included as priority area of research.
7. Studies on natural products should be geared up to investigate their potential in the management of neurodegenerative disorders
8. Neuroscience departments or sections should be established in medical schools and universities by involving basic and clinical neuroscience.

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Vinay K. Khanna, PhD
Secretary
Indian Academy of Neurosciences