

Program

Sunday 31 October

Registration and reception at the Leela Kempinski Hotel, Kovalam

16:00-19:00 Registration

18:00-21:00 Welcome reception (*Beach side*)

Monday 1 November

8:45-9:15 Opening remarks/Welcome address (Chair: Ernst-Ludwig Winnacker)
Dr. M.K. Bhan, Department of Biotechnology, Government of India
Prof. Akito Arima, President of HFSP

9:15 – 9:30 Presentation of HFSP Nakasone Medal to Karl Deisseroth (Akito Arima, President, HFSP)

9:30-10:30 HFSP Nakasone Lecture (Chair: Ernst-Ludwig Winnacker)
Optogenetics: development and application
Karl Deisseroth
Stanford University

10:30-11:00 Coffee

Oral Session I (Chair: Ludger Johannes)

11:00-11:20 Deterministic and stochastic cell identity choices and CNS wiring specificity
Spletter, M., Luo, L., Adam, Y., Mizrahi, A., Ott, S., Koohy, H., Vance, K.,
Koentges, G.

- 11:20-11:40 **Molecular mechanism of reprogramming**
Siegl-Cachedenier, I., Ruiz i Altaba, A.
- 11:40-12:00 **Structural insights into the human GW182-PABPC1 interaction in miRNA-mediated silencing**
Jinek, M., Fabian, M.R., Sonenberg, N., Doudna, J.A.
- 12:00-12:20 **Co-translational protein folding on the ribosome: Using NMR spectroscopy to provide structure and dynamics of ribosomes and ribosome-nascent chains**
Christodoulou, J., Takemoto, C., Fucini, P.
- 12:20-12:40 **How learning to read changes the brain. Extent and origins of expertise for reading in the visual system.**
Szwed, M., Cohen, L., Dehaene, S.
- 12:40-14:00 *Lunch*
- 14:00-16:00 **Chalkboard sessions:**
1. **Neuroscience**
(Moderators: Rae Silver, Dora Angelaki)
 2. **Cell biology: stem cells, membranes and the cytoskeleton**
(Moderators: Ariel Ruiz i Altaba, Jyotsna Dhawan)
 3. **Systems and developmental biology**
(Moderators: Judith Armitage, Paul Lasko)
 4. **Macromolecules – structure and function**
(Moderators: R. Sowdhamini, John Christodoulou)
- 16.00 – 18.00 **Poster session I**
- 19.30 *Dinner (Taj Vivinda – beach side)*

Tuesday 2 November

Oral Session 2 (Chair: Young-Joon Kim)

- 8:45-9:05 **Structural basis of oligomerization in the stalk region of dynamin-like MxA**
Gao, S., von der Malsburg, A., Paeschke, S., Behlke, J., Haller, O., Kochs, G.,
Daumke, O.
- 9:05-9:25 **Finding the enemy within: how cytoplasmic receptors detect viruses**
Rehwinkel, J., Tan, C.P., Goubau, D., Schulz, O., Pichlmair, A., Bier, K., Robb,
N., Vreede, F., Barclay, W., Fodor, E., Reis e Sousa, C.
- 9:25-9:45 **The architecture of the head module of mediator of transcription regulation**
Imasaki, T., Cai, G., Tsai, K., Berger, I., Cardelli, F., Asturias, F.J., Takagi, Y.
- 9:45-10:05 **Genetic mechanisms of hybrid incompatibility in *Arabidopsis Thaliana***
Laitinen, R., Boldt, H., Todesco, M., Bomblies, K., Weigel, D.
- 10:05-10:25 **Re-defining problem solving**
Sumpter, D.J.T., Beekman, M., Nakagaki, T., Middelndorf, M.
- 10:25-10:55 *Coffee*

Oral Session 3: Spotlight on India (Chair: Anuradha Lohia)

- 10:55-11:15 **Cellular context mediated destabilization of miRNA in mammalian cells:
New role of RNA processing bodies**
Bhattacharyya, S.N., Ghosh, S., Ray, A., Patranobis, S.
- 11:15-11:35 **Implications of tail structural features on molecular mechanisms and
biological functions of myosins.**
Sowdhamini, R., Sunitha, M., Shamala, D.P., Kalaimathy, S., Nasir, S.P., Iftekar, M.,
Reddy, C., Flyvbjerg, H., Spudich, S.
- 11:35-11:50 **Differentiating “safe” from “dangerous” - from single neurons to behaviour**
Chattarji, S., Ghosh, S.

- 11:50-12:05 Conserved features of Genomic Packaging and Epigenetic Mechanisms in the regulation of Hox Clusters.
Mishra, R.K.
- 12:05-12:20 Creating the Cortex and the Hippocampal Organizer
Tole, S.
- 12:20-12:35 Taking single molecule techniques beyond single molecules.
Mallik, R.
- 12:35-14:00 Lunch
- 14:00-16:00 Poster session 2
- 16:00-17:00 Open discussion with HFSP – alumni meetings and other issues
- 17:00-18:00 Special lecture: “Science looks at Ayurveda” (Chair: K. VijayRaghavan)
M.S. Valiathan
- 18:00-19:00 Special lecture “The trajectory of Life Sciences Research in India”
(Chair: Ernst-Ludwig Winnacker) *M.K. Bhan*
- 19:30 Dinner (*Leela Kempinski – beach side*)

Wednesday 3 November

Oral Session 4 (Chair: Dora Angelaki)

- 8:45-9:05 Optogenetic dissection of neural circuit underlying locomotory decision-making in *caenorhabditis elegans*
Kocabas, A., Guo, Z.V., Ramanathan, S.
- 9:05-9:25 Cell-shape changes, forces and genes: Integrating the genetics, mechanics and phenomenology of embryonic wound healing
Cranston, P.G., Veldhuis, J.H., Brodland, G.W., Antunes, M., Cordeiro, J., Jacinto, A., Ma, X., Lynch, H.E., Crews, S., Hutson, M.S.

9:25-9:45 **Discrete population code in the mouse auditory cortex revealed by *in-vivo* two-photon calcium imaging**
Bathellier, B., Rumpel, S.

9:45-10:05 **Characterizing malaria parasite proteins exported to the host during intracellular development.**
Ingmundson, A., Nahar, C., Brinkmann, V., Matuschewski, K.

10:05-10:25 **Crystal structures of the ribosome bound with EF-Tu and Aminoacyl-tRNAs**
Schmeing, T.M., Voorhees, R.V., Kelley, A.C., Ramakrishnan, V.

10:25-10:55 Coffee

Oral Session 5 (Chair: Fred Mackintosh)

10:55-11:15 **Physical and biochemical mechanisms of membrane deformation in lipid-mediated endocytosis**
Johannes, L., Parton, R., Bassereau, P., Sens, P., Rao, M., Mayor, S.

11:15-11:35 **Spatial positive feedback at the onset of mitosis**
Santos, S.D.M., Ferrell, J.E.

11:35-11:55 **Analysis of high-content high-throughput siRNA virus screens**
Rämö, P., Snijder, B., Sacher, R., Pelkmans, L.

11:55-12:15 **Magnetite-based magnetoreceptor cells in the olfactory organ of rainbowtrout**
Yuen, B.B.H., Cadiou, H., Muhamad, A.N., Walker, M.J., McNaughton, P.A., Eder, S., Winklhofer, M., Kobayashi, A., *Kirschvink, J.*

12:15-14:00 Lunch

Oral Session 6 (Chair: Paul Lasko)

14:00-14:20 **Quantitative fruit fly olfactory behaviour**
Ramoya, P., Schaffter, T., Floreano, D., Benton, R.

14.20-14.40 **Alzheimer's disease as a new form of brain-specific diabetes instigated by A β oligomers**

De Felice, F.G., Bomfim, T.R., Decker, H., Silverman, M.A., Talbot, K., Klein, W.L., Ferreira, S.T.

14.40-15.00 **Turnover dynamics of diffuse actin and regulators at the leading edge**

Smith, M.B., Vavylonis, D., *Watanabe, N.*

15.00-15.20 **Cortical mechanics in motility and pattern formation as active reaction-diffusion-advection processes**

Bois, J.S., Jülicher, F., Grill, S.W.

15.20-15.50 **Coffee**

Oral Session 7 (Chair: Madan Rao)

15:50-16:10 **Control of membrane protein topology by a single C-terminal residue**

Slusky, J.S., Seppälä, S., Lloris-Garcera, P., Rapp, M., von Heijne, G.

16:10-16:30 **Curvature-coupled recruitment of dynamin and amphiphysin to lipid membrane**

Sorre, B., Lenz, M., Callan-Jones, A., Joanny, J.F., Nassoy, P., Bassereau, P., *Roux, A.*

16:30-16:50 **Investigating the architecture of the xenopus meiotic spindle using laser microsurgery**

Brugues, J., Nuzzo, V., Mazur, E., Needleman, D. J.

16:50-17:10 **Modulating zebrafish glycome to decipher glycosaminoglycan-FGF interactions *in vivo***

Nguyen, T.K.N., Tran, V.M., Venkataswamy, S., Kjellen, L., Dorsky, R.I., Chien, C.B., Balagurunathan, K.

17:15-18:15 **Plenary Lecture (Chair: Ernst-Ludwig Winnacker) Analyses of Pleistocene Hominid Genomes**

Svante Pääbo Max Planck Institute for Evolutionary Anthropology Leipzig

19:30 **Farewell dinner – (Leela Kempinski - beach side)**