

15th International Conference on Retinal Proteins

30th September to 5th October 2012, Monte Verita, Ascona, Switzerland

Sunday, September 30, 2012	
17:00 to 19:30	Opening Ceremonies
17:00 to 18:40	Registration, Welcome drink and Poster setup
18:40 to 19:00	Welcome Address Gebhard Schertler and Ulrike Alexiev
19:00 to 19:30	Title: A look back: the microbial rhodopsins Dieter Oesterhelt , MPI of Biochemistry, Martinsried
19:30	<i>Open Bar and Buffet</i>
Monday, October 01, 2012	
9:00 to 10:30	Session I: Retinal Proteins in the Visual System Chair: Seva Gurevich
9:00 to 9:30	Title: Thermal stability of rhodopsin Elsa Yan , Yale University, New Haven
9:30 to 9:50	Title: Rhodopsin evolution and structural plasticity: Absolutely conserved features are inessential Theobald Douglas , Brandeis University, Waltham
9:50 to 10:10	Title: Vibrational modes of the retinal Schiff base in primate color vision Kota Katayama , Nagoya Institute of Technology (poster talk)
10:10 to 10:30	Title: From molecular to cellular protein dynamics in visual rhodopsin function Ulrike Alexiev , Free University Berlin
10:30 to 11:00	<i>Coffee Break</i>
11:00 to 12:30	Session II: Rhodopsin Structure and Function Chair: Jörg Standfuss
11:00 to 11:30	Title: The retinal channel in vertebrate opsin Peter Hofmann , Charite Berlin
11:30 to 11:50	Title: Orientation of the retinal chromophore in metarhodopsin II revisited Steven Smith , Stony Brook University
11:50 to 12:10	Title: Understanding molecular signatures of GPCR

	<p>conformational states AJ Venkatakrishnan, MRC-Laboratory of Molecular Biology, Cambridge (poster talk)</p>
12:10 to 12:30	<p>Title: Light-induced structural changes of rhodopsin probed by cysteine S-H stretching vibrations Yasushi Imamoto, Kyoto University (poster talk)</p>
12:30 to 14:00	<i>Lunch break</i>
14:00 to 16:00	<p>Session III: Retinal Proteins and Disease Chair: Elsa Yan</p>
14:00 to 14:30	<p>Title: Generation, degeneration, preservation: hypoxia as a retinal regulator Christian Grimm, University of Zürich</p>
14:30 to 14:50	<p>Title: Unraveling new correlations between rhodopsin mutations and retinal disease Pere Garriga, Universitat Politecnica de Catalunya, Barcelona</p>
14:50 to 15:10	<p>Title: The structural basis for congenital stationary night blindness caused by mutations in rhodopsin Jörg Standfuss, Paul Scherrer Institute, Villigen</p>
15:10 to 15:30	<p>Title: Restoration of folding and function in rhodopsin ADRP mutants Phil Reeves, University of Essex</p>
15:30 to 15:50	<p>Title: In vitro and in vivo studies of the interaction of chlorin e6 with rhodopsin and its role in retinitis pigmentosa Judith Klein-Seetharaman, University of Pittsburgh</p>
15:50 to 16:30	Coffee Break
16:30 to 18:30	<p>Session IV: Interacting Effector Proteins Chair: Peter Hofmann</p>
16:30 to 17:00	<p>Title: The mechanism of arrestin-1 binding to light-activated phosphorhodopsin Seva Gurevich, Vanderbilt University, Nashville</p>
17:00 to 17:20	<p>Title: Arrestin-rhodopsin binding at single amino acid resolution Martin Ostermaier, Paul Scherrer Institute, Villigen (poster talk)</p>
17:20 to 17:40	<p>Title: Structural and functional insights into the arrestin-rhodopsin binding stoichiometry Martha Sommer, Charite Berlin</p>
17:40 to 18:00	<p>Title: GPCR signal transduction investigated by FTIR spectroscopy Matthias Elgeti, Charite Berlin (poster talk)</p>

18:00 to 18:20	Title: Combined X-ray crystallographic, in-situ UV-Vis and QM/MM studies highlight alternate retinal binding modes in CRALBP Achim Stocker , University of Bern
18:30 to 20:00	<i>Dinner Break</i>
20:00 -	Bar and Poster Session
Tuesday, October 02, 2012	
9:00 to 9:45	Keynote Lecture
9:00 to 9:45	Keynote: Channelrhodopsin: 140 Years of Research Peter Hegeman , Humboldt University Berlin
9:45 to 12:10	Session V: Channelrhodopsin Structure and Function Chair: Peter Hegeman
09:45 to 10:15	Title: Structural basis for light-gated cation conductance by channelrhodopsin Osamu Nureki , University of Tokyo
10:15 to 10:35	Title: Diversity and mechanisms of channelrhodopsins and homologous photosensors John Spudich , University of Texas, Houston
10:35 to 11:00	Title: Proton transfer reactions in channelrhodopsin-2 Joachim Heberle , Free University Berlin
11:00 to 11:30	<i>Coffee Break</i>
11:30 to 11:50	Title: On the photocycle of C128T step function in channelrhodopsin 2 Franz Bartl , Charite Berlin
11:50 to 12:10	Title: Tuning the light sensitivity of channelrhodopsin 2 Christian Bamann , MPI of Biophysics, Frankfurt (poster talk)
12:10 to 14:00	<i>Lunch break</i>
14:00 to 15:30	Session VI: Application of Retinal Proteins Chair:
14:00 to 14:30	Title: Exploring the optogenetic potential of metazoan opsins Robert Lucas , Manchester University
14:30 to 14:50	Title: Engineering genetically encoded high-performance photo switchable ion channels Kyoko Tsunoda , Humboldt University Berlin (poster talk)
14:50 to 15:10	Title: A protein-based retinal prosthesis: retinal stimulation via an ion gradient

	Nicole Wagner , University of Connecticut, Storrs (poster talk)
15:10 to 15:30	Title: Mechanism of voltage-sensitive fluorescence in Archaerhodopsin 3 Dougal Maclaurin , Harvard University, Boston (poster talk)
15:30 to 16:00	<i>Coffee Break</i>
16:00 to 17:30	Session VII: Emerging Techniques Chair: Ulrike Alexiev
16:00 to 16:30	Title: Probing GPCR Signaling with Genetically-Encoded Non-Natural Amino Acids Thomas Sakmar , Rockefeller University, New York
16:30 to 16:50	Title: Classical Force Field and QM/MM simulations of retinal proteins Elstner Marcus , Karlsruhe Institute of Technology
16:50 to 17:10	Title: Assessing how Activating Mutations and Allosteric Modulators Affect the Structure, Function and Conformational Dynamics in GPCRs using a “TriQ” Method. David Farrens , Oregon Health and Science University, Portland
17:10 to 17:30	Title: Solution-State NMR Studies of the Seven-Helix Transmembrane Protein Sensory Receptor II Antoine Gautier , Paul Scherrer Institute, Villigen
17:30 to 20:00	<i>Wine tasting at local winery</i>
20:00 to	<i>Dinner Break</i>
Wednesday, October 03, 2012	
9:00 to 10:30	Session VIII: Microbial Rhodopsins 1: Sensory Rhodopsins Chair: Hideki Kandori
9:00 to 9:30	Title: Sensory rhodopsin signaling complex and its HAMP domain Martin Engelhard , MPI of Molecular Physiology, Dortmund
9:30 to 9:50	Title: Phototransduction cascade of Anabaena sensory rhodopsin – conformational changes of the receptor and the transducer Leonid Brown , University of Guelph
9:50 to 10:10	Title: Functional diversity of sensory rhodopsins from microbes Yuki Sudo , Nagoya University
10:10 to 10:30	Title: The proton circulation pathways in the two-photon cycle of Sensory Rhodopsin-I Rob Bogomolni , University of California, Santa Cruz
10:30 to 11:00	<i>Coffee Break</i>

11:00 to 12:30	Session IX: Microbial Rhodopsins 2: Light-driven Ion pumps Chair: Klaus Gerwert
11:00 to 11:30	Title: Crystal structure of an M state of the azide complex of pharaonis halorhodopsin Tsutomu Kouyama , Nagoya University
11:30 to 11:50	Title: Secondary and tertiary structure of bacteriorhodopsin unfolded in SDS micelles and during in vitro refolding Janos Lanyi , University of California, Irvine
11:50:12:10	Title: Mixing potential energy surfaces of the ultrafast isomerization of retinal in bacteriorhodopsin Oliver Ernst , University of Toronto
12:10 to 12:30	Title: Initial conformation effects on primary events in retinal proteins - ASR and BR Sandy Ruhman , The Hebrew University of Jerusalem
<i>12:30 to 16:00</i>	<i>Free afternoon, Hiking along the Lago Maggiore</i>
16:00 to 18:00	Session X: Diversity in retinal proteins Chair: Yoshinori Shichida
16:00 to 16:30	Title: New microbial rhodopsins from the ocean Hideki Kandori , Nagoya Institute of Technology
16:30 to 16:50	Title: Molecular and functional properties of non-visual opsins Akihisa Terakita , Osaka City University
16:50 to 17:10	Title: Crystal structures of three proteorhodopsins Hartmut Luecke , University of California, Irvine
17:10 to 17:30	Title: Temperature-dependent solid-state electron transport through bacteriorhodopsin: comparison to other proteins Mordechain Sheves , Weizmann Institute of Science, Rehovot
17:30 to 17:50	Title: Molecular properties of vertebrate non-visual opsins, Opn5 and Opn5-like protein Takahiro Yamashita , Kyoto University
<i>18:00 to 20:00</i>	<i>Dinner Break</i>
20:00 -	Bar and Poster Session
Thursday, October 04, 2012	
9:00 to 10:30	Session XI: Structure and Function of 7TM receptors Chair: Gebhard Schertler
9:00 to 9:30	Title: Structure of the agonist-bound neurotensin receptor NTS1 Reinhard Griesshammer , National Institutes of Health, Rockville

9:30 to 9:50	Title: Structural insights into opioid receptor function Sebastian Granier , Stanford University
9:50 to 10:10	Title: Structural analysis of photo-intermediates of squid rhodopsin Midori Murakami , Nagoya University
10:10 to 10:30	Title: Prediction of ligand-induced activation of a human olfactory receptor by combining site-directed mutagenesis with dynamic homology modeling Steffen Wolf , CAS–Max-Planck Partner Institute for Computational Biology, Shanghai (poster talk)
10:30 to 11:00	<i>Coffee Break</i>
11:00 to 12:10	Session XII: Conformational changes in 7TM proteins Chair: Oliver Ernst
11:00 to 11:30	Title: The structure and function of GPCRs studied by computational tools Leonardo Pardo , Universitat Autònoma de Barcelona
11:30 to 11:50	Title: Light induced structural changes of photoreceptor membrane proteins as revealed by in-situ photo-irradiated solid-state NMR Akira Naito , Yokohama National University
11:50 to 12:10	Title: The long-range interaction between EF-loop and retinal binding pocket in proteorhodopsin characterized by solid-state NMR Michaela Blum , Goethe University Frankfurt (poster talk)
12:10 to 14:00	<i>Lunch break</i>
14:00 to 15:30	Session XIII: Theoretical aspects and structural water molecules , Chair: Xavier Deupi
14:00 to 14:30	Title: Photoabsorption of ultraviolet cone pigments regulated by active site water molecules Victor Batista , Yale University, New Haven
14:30 to 14:50	Title: Proton-transfer via protein-bound water molecules in microbial rhodopsins Klaus Gerwert , Ruhr University, Bochum
14:50 to 15:10	Title: Water and hydrogen bond dynamics in bacteriorhodopsin and channelrhodopsin-2 models Nicoleta Bondar , Free University Berlin
15:10 to 15:30	Title: The mechanism of photoisomerization in ASR – Insights from QM/MM simulations Igor Schapiro , Bowling Green State University (poster talk)

15:30 to 15:50	Title: tba Ursula Roethlisberger , EPFL, Lausanne
16:00 to 16:30	<i>Coffee Break</i>
16:30 to 17:30	Closing Keynote Lecture
16:00 to 16:45	Keynote: Rod and cone visual pigments: Molecular properties and functional diversity Yoshinori Shichida , Kyoto University
16:45 to 17:00	Closing Remarks: Gebhard Schertler and Ulrike Alexiev
18:30 to 20:30	<i>Banquet Dinner</i>
Friday, October 05, 2012	
7:00 to 10:00	<i>Breakfast and Departure</i>