International Workshop

The workings of ion transporters and channels

organized by the German Biophysical Society, Section 3, Medical Biophysics
(Deutsche Gesellschaft für Biophysik)

Bildungs- und Begegnungszentrum Clara Sahlberg, Koblanckstraße 10,
14109 Berlin

Program

Friday, August 9, 2019	
14:00	Registration / Rooms / Coffee
15:00-15:15	Welcome
	Session 1: Structural basis of ion transfer
15:15-15:55	**Horst Vogel (EPFL Lausanne, Switzerland)** *Transmembrane signaling by ligand-gated ion channels*
15:55-16:35	**Rouslan Efremov (VIB-VUB Center for Structural Biology, Brussels, Belgium)** *Structure and gating of ryanodine receptor in lipid environment*
16:35-17:15	**Kate Poole (School of Medical Science, UNSW Sydney, Australia)** *Mechanical signaling via ion channels*
17:15-17:55	**Ana-Nicoleta Bondar (Freie Universität Berlin, Germany)** *Water and lipid interactions in ion channel function*
18:00-19:00	**Dinner**
19:15-20:15	**Plenary Evening Talk**
19:15-20:15	**Francisco Bezanilla (University of Chicago, USA)** *Ion channel voltage sensors and membrane capacitance*
20:15-	Poster session - open end

Saturday, August 10, 2019	
7:30-9:00	Breakfast
	Session 2: Mechanisms of ion channels
9:00-9:40	**Klaus Benndorf (Institut für Physiologie II, Universitätsklinikum Jena, Germany)** *Combined optical and electrophysiological approaches to decipher the activation gating of HCN pacemaker channels*
9:40-10:20	**Isaiah Arkin (Hebrew University of Jerusalem, Israel)** *Flu channels, H-bonding energetics, and everything in between*
10:20-10:50	Coffee break
10:50-11:30	**Han Sun (Leibniz-Forschungsinstitut für Molekulare Pharmakologie, Berlin, Germany)** *Dynamics of ion channel regulation and selectivity*
11:30-12:10	**Jessica Swanson (University of Utah, USA)** *Understanding coupled ion exchange in ClC antiporters from the kinetic landscape of Cl^-/H^+ exchange*
12:20-13:30	Lunch
	Session 3: Proton channels
13:30-14:10	**Susan Smith (Kennesaw State University, Georgia, USA)** *Hydrophobic gasket mutations add to H_V1's mysterious allure*
14:10-14:50	**Boris Musset (Paracelsus Universität Nürnberg, Germany)** *How zinc affects the workings of voltage-gated proton channels*
14:50-15:20	Coffee break
15:20-16:00	**Ramona Schlesinger (Freie Universität Berlin, Germany)** *Proton translocations in channelrhodopsin-1 from Chlamydomonas augustae*
16:00-16:40	**Igor Schapiro (Hebrew University of Jerusalem, Israel)** *The origin of heterogeneity in the red/green cyanobacteriochrome anpixjg2*
16:40-17:10	**Michalis Lazaratos (Freie Universität Berlin, Germany)** *Dynamic hydrogen-bond networks of channelrhodopsin variants. Developing new algorithms for efficient analyses*
19:15-23:00	Boat trip - Conference dinner on board

Sunday, August 11, 2019	
7:30-9:00	Breakfast
	Session 4: Light-activated channels
9:00-9:40	**Dirk Trauner (New York University, USA)** *Controlling ion channels with photopharmacology*
9:40-10:20	**Armagan Kocer (University of Twente, Faculty of Science and Technology, Bioelectric Signaling and Engineering, The Netherlands)** *Mechanistic understanding and reverse engineering of ion channels: from fundamental to applied science*
10:20-11:00	Coffee break
11:00-11:30	**Fucsia Crea (Freie Universität Berlin, Germany**) *Photo-activation of mechanosensitive ion channels*
11:30-12:10	**Franz Bartl (Humboldt Universität zu Berlin, Germany)** *Energy transfer from chromophore to protein in the red-activatable channelrhodopsin ReaCh*
12:20-13:30	Lunch
	Session 5: Methodologies
13:30-14:10	**Armen Mulkidjanian (Universität Osnabrück, Germany)** *Class A GPCRs increase their sensitivity and selectivity by harnessing the energy of membrane sodium potential*
14:10-14:50	**Peter Hegemann** (**Humboldt Universität zu Berlin, Germany**) *Molecular engineering of light-activated ion transporters*
14:50-15:20	Coffee break
15:20-16:00	**Henrike M. Müller-Werkmeister (Universität Potsdam, Germany)** *Time-resolved crystallography to study protein dynamics*
16:00-16:40	**Ernst-Walter Knapp (Freie Universität Berlin, Germany)** *Identifying the proton loading site in cytochrome c oxidase*
16:40-17:30	Discussion

End of Meeting and Departure