

Wednesday, October 17, 2018

(at Französische Friedrichstadtkirche, Gendarmenmarkt 5, 10117 Berlin, Germany)

Opening remarks

17:00	Registration
18:00	Introduction: Miriam Goodman
18:10	Welcome Lecture: Robert Fettiplace, Kavli Prize Winner 2018
19:10	Reception

Thursday, October 18, 2018

(at Max Delbrück Communications Center – MDC.C – House 83,
Robert-Rössle-Straße 10, 13125 Berlin, Germany)

Axon 1

08:00	Registration
	Session 1 Chair: Gary Lewin
09:00	Martin Göpfert , University of Göttingen <i>Mechanosensitive channels for gravity sensing and hearing in flies</i>
09:25	Lightning talk: Jan Clemens, European Neuroscience Institute <i>Mean and Variance adaptation in the Drosophila Ear</i>
09:30	Reza Sharif Naeini , McGill University <i>TACAN is an Ion Channel Involved in Noxious Mechanosensation</i>
09:55	Lightning talk: Kara Marshall, Scripps Research Institute <i>Molecular Mechanisms of Stomach Stretch Sensing</i>
10:00	Kristian Franze , University of Cambridge <i>The role of mechanosensitive ion channels in vertebrate development</i>
10:25	Lightning talk: Nicole Scholz, Rudolf-Schönheimer-Institute of Biochemistry <i>GPCR-dependent modulation of ion channels</i>
10:30	Coffee Break

- 11:00 **Slav Bagriantsev**, Yale University
Mechano-gated ion channels in somatosensory neurons of tactile specialist birds (tent)
- 11:25 Lightning talk: Yiquan Tang, MRC Laboratory of Molecular Biology
The evolutionarily conserved TMC-CIB channel complexes function as mechanosensors in Caenorhabditis elegans and mouse
- 11:30 **Laura Bianchi**, University of Miami
Glial regulators of ionic homeostasis control mechanosensation in C. elegans
- 11:55 Lightning talk: Fabian Passini, Department of Health Sciences and Technology - ETH Zurich
PIEZO1 Senses Mechanical Loading and Induces Nanomolar Calcium Signals in Tendon Cells
- 12:00 **Jörg Grandl**, Duke University Medical Center
Transduction of Mechanical Stimuli by Piezo Ion Channels
- 12:30 Lunch and Poster Session
- Session 2 | Chair: Martin Göpfert**
- 14:00 **Miriam Goodman**, Stanford University
C.elegans sensory channels
- 14:25 Lightning talk: Anthony Peng, University of Colorado Anschutz
Is climbing and slipping the true model for myosin motor adaptation in mammalian hair cells?
- 14:30 **David Corey**, Harvard University
The mammalian hair cell channel
- 14:55 **Jeffrey Holt**, Harvard University
The hair cell mechanotransduction channel
- 15:20 Lightning talk: Eric Mulhall, Harvard Medical School
The Dynamic Strength of the Tip-Link Bond in Hair Cells
- 15:25 Lightning talk: Philip Hehlert, Schwann-Schleiden Research Center
Mechano-gating properties of Drosophila NOMPC

- 15:30 **Thomas Jentsch**, Leibniz Institute for Molecular Pharmacology
Properties and roles of volume-regulated LRRC8/VRAC anion channels
- 15:55 **Ulrich Müller**, Johns Hopkins Baltimore
New molecular players in hair cell mechanotransduction
- 16:20 Lightning talk: Frederick Schwaller, Max Delbrück Center for Molecular
Medicine
Ush2A is a vibration sensor involved in touch
- 16:25 **Elizabeth Haswell**, Washington University
Mechanosensitive Ion Channels in Green Organisms
- 16:50 Lightning talk: Ivan Radin, Washington University, St. Louis
Evolution and adaptation of Piezo proteins in the green lineage
- 16:55 Lightning talk: Manuela Schmidt, MPI of Experimental Medicine
Regulation of Piezo2 function – novel insights from its interactome
- 17:05 Poster session
- 19:05 Free evening

Friday, October 19, 2018

(at Max Delbrück Communications Center – MDC.C – House 83,
Robert-Rössle-Straße 10, 13125 Berlin, Germany)

Axon 1

Session 3 | Kate Poole

- 09:00 **Paul Heppenstall**, EMBL Monterotondo
Manipulating sensory transduction with genetic tools in mice
- 09:25 **Kate Poole**, University of New South Wales
Chondrocyte mechanotransduction
- 09:50 Lightning talk: Michael Dudek, University of Manchester
The Trpv4 channel is involved in setting the pace of the circadian clock in cartilage and intervertebral discs
- 09:55 **Anthony Ricci**, Stanford University
The emerging role of the lipid bilayer in regulating hair cell mechanotransduction
- 10:20 Lightning talk: Chonglin Guan, University of Göttingen
Myosin-dependent mechanosensory adaptation in Drosophila
- 10:25 Coffee Break
- 11:00 **Eric Honore**, CNRS Nice
Piezoes roles in regulating vascular tone
- 11:25 Lightning talk: Zhongjie Ye, Scuola Internazionale Superiore di Studi Avanzati
Unfolding of mechanosensitive channels Piezo1 and Piezo2
- 11:30 **Valeria Vásquez**, University of Tennessee
Fine-tuning ion channel gating with dietary fatty acids
- 11:55 Lightning talk: Sylvia Fechner, Stanford University, School of Medicine
Composition of native met channels responsible for gentle touch sensation

- 12:00 **Medha Pathak**, University of California, Irvine
Piezo1 activation gains traction
- 12:25 Lightning talk: Angela Schlegel, Washington University, Saint Louis
Channel Behavior of the Mechanosensitive Ion Channel MscS-Like 1 is Modulated by Charged Pore-Lining and Soluble Domain Cys Residues
- 12:30 Lunch and Poster Session
- Session 4 | Chair: Lily Jan**
- 14:30 **Gary Lewin**, MDC Berlin
Tethers in sensory transduction: man and mouse
- 14:55 Lightning talk: Johannes Elferich, Oregon Health and Science University
Structure of the PCDH15/LHFPL5 complex at the lower insertion point of the mammalian hair cell tip link
- 15:00 **Steve Brohawn**, University of California, Berkeley
Mechanosensitive Potassium Channel Structure and Function
- 15:25 Lightning talk: Jerome Lacroix, Western University of Health Sciences
Identification of the Binding Site of a Piezo1-Selective Small Molecule Agonist
- 15:30 Coffee Break
- 16:00 **Merritt Maduke**, Stanford University
Mechanosensitive channels in ultrasonic neuromodulation
- 16:25 Lightning talk: Christopher Cunningham, Johns Hopkins University
Transmembrane-O-methyltransferase (TOMT) regulates localization of TMC proteins to stereocilia in cochlear hair cells
- 16:30 **Ardem Patapoutian**, HHMI Scripps Research Institute
Piezo ion channel structure and function
- 16:55 Lightning talk: Daniel Tracey; Indiana University
*Proprioceptive neurons in larvae of *Drosophila melanogaster* show direction selective responses that require the mechanosensory channel TMC*

Saturday, October 20, 2018

(at Max Delbrück Communications Center – MDC.C – House 83,
Robert-Rössle-Straße 10, 13125 Berlin, Germany)

Axon 1

Session 5 | Chair: Miriam Goodman

- 09:30 **Boris Martinac**, University of New South Wales
Bacterial mechanotransduction channels
- 09:55 Lightning talk: Allen Liu, University of Michigan
*Mechanogenetics: Repurposing bacterial mechanosensitive channel
MscL in mammalian cells*
- 10:00 **Carsten Grashoff**, MPI for Biochemistry
Piconewton-sensitive biosensors to investigate molecular forces in cells
- 10:25 Lightning talk: Sarah Clark, Oregon Health and Science University
*Strategies for structural and compositional analysis of the hair cell
mechanotransduction complex*
- 10:30 Coffee Break
- 11:00 **Yuh Nung Jan**, University of California, San Francisco
Structure of drosophila mechanotransduction TRP channels
- 11:25 Lightning talk: Oscar Sanchez Carranza, Max Delbrück Center for
Molecular Medicine
Voltage-gating of mechanosensitive Piezo channels
- 11:30 **Bailong Xiao**, School of Pharmaceutical Sciences, Tsinghua University
Structure and function of PIEZO proteins
- 11:55 Lightning talk: Anders Enjin, Lund University
Humidity sensing in insects
- 12:00 Lunch and Poster Session
- 14:00 **Stefan Lechner**, University of Heidelberg
Sensory transduction regulation
- 14:25 Closing remarks, Farewell
- 15:00 End of Conference

	First author	Topic
P1	Bégay, Valérie	Children suffering from orofacial disorders show impaired spatial tactile acuity
P2	Bikou, Maria	Functional analysis of PIEZO1 using genome edited hiPSC-derived cardiomyocytes as a model system
P3	Caprara, Giusy	Is climbing and slipping the true model for myosin motor adaptation in mammalian hair cells?
P4	Clark, Sarah	Strategies for structural and compositional analysis of the hair cell mechanotransduction complex
P5	Clemens, Jan	Mean and variance adaptation in the Drosophila ear
P6	Cunningham, Christopher	Transmembrane-O-methyltransferase (TOMT) regulates localization of TMC proteins to stereocilia in cochlear hair cells
P7	Dudek, Michal	The Trpv4 channel is involved in setting the pace of the circadian clock in cartilage and intervertebral discs
P8	Effertz, Thomas	Cell membrane composition affects auditory MET-channel gating and activity in both mammals and Drosophila melanogaster
P9	Eibl, Clarissa	Control of AMPA receptor activity by the extracellular loops of auxiliary proteins
P10	Eigenbrod, Ole	Rapid molecular evolution of pain insensitivity in multiple African rodents
P11	Elferich, Johannes	Structure of the PCDH15/LHFPL5 complex at the lower insertion point of the mammalian hair cell tip link
P12	Enjin, Anders	Humidity sensing in insects
P13	Fechner, Sylvia	Composition of native met channels responsible for gentle touch sensation
P14	Fleischer, Raluca	Trimolecular Fluorescence Complementation Assay System for Membrane-localized Protein-Protein Interactions
P15	George, Shefin	Membrane lipid properties modulate hair cell mechanotransduction
P16	Guan, Chonglin	Myosin-dependent mechanosensory adaptation in Drosophila
P17	He, Liping	Proprioceptive neurons in larvae of Drosophila melanogaster show direction selective responses that require the mechanosensory channel TMC
P18	Hehlert, Philip	Mechano-gating properties of Drosophila NOMPC
P19	Heureaux, Johanna	Mechanogenetics: Repurposing bacterial mechanosensitive channel MscL in mammalian cells
P20	Kossen, Robert	Mechano-TRP modulates Drosophila heat sensation
P21	Kühnemund, Johannes	Physiological characterization of somatosensory afferents innervating the plantar skin following neuropathic injury
P22	Lacroix, Jerome	Identification of the Binding Site of a Piezo1-Selective Small Molecule Agonist

	First author	Topic
P23	Marshall, Kara	Molecular Mechanisms of Stomach Stretch Sensing
P24	Mousavi, Seyed Ali Reza	Characterization of Arabidopsis thaliana Piezo ion channel in mechanosensation
P25	Mulhall, Eric	The Dynamic Strength of the Tip-Link Bond in Hair Cells
P26	Narayanan, Pratibha	Regulation of Piezo2 function – novel insights from its interactome
P27	Ojeda-Alonso, Julia	Has Tmem150c transmembrane protein a role in mechanoreceptors function of somatosensory system?
P28	Opfermann, Sebastian	Activation of individual AMPA receptors cross-linked at the ligand binding domain layer
P29	Paricio-Montesinos, Ricardo	Sensory afferent coding of non-noxious thermal perception in mice
P30	Passini, Fabian S.	PIEZO1 Senses Mechanical Loading and Induces Nanomolar Calcium Signals in Tendon Cells
P31	Poshtiban, Anahita	Photoactive unnatural amino acids reveal functional modules of the AMPA receptor membrane domain
P32	Radin, Ivan	Evolution and adaptation of Piezo proteins in the green lineage
P33	Rathjen, Fritz	cGMP signaling induced by the receptor guanylyl cyclase Npr2 mediates T-shaped branching of axons of mesencephalic trigeminal neurons
P34	Richa, Prachi	Mechano-gated ion channels in coordinated epithelial cell dynamics in Drosophila
P35	Rotordam, Maria Giustina	A high-throughput patch clamp method to investigate Piezo1 channels in red blood cells under physiological and pathophysiological conditions
P36	Sánchez-Carranza, Oscar	Voltage-gating of mechanosensitive Piezo channels
P37	Schlegel, Angela	Channel Behavior of the Mechanosensitive Ion Channel MscS-Like 1 is Modulated by Charged Pore-Lining and Soluble Domain Cys Residues
P38	Scholz, Nicole	GPCR-dependent modulation of ion channels
P39	Schwaller, Fred	Ush2A is a vibration sensor involved in touch
P40	Selescu, Tudor	Piezo1 is functionally expressed in cultured Schwann cells
P41	Tang, Yi-Quan	The evolutionarily conserved TMC-CIB channel complexes function as mechanosensors in Caenorhabditis elegans and mouse
P42	Tsui, Alex	In Touch with Mechanically Activated Piezo Channels via Molecular Dynamics
P43	Wang, Jing	The mechanosensitive Piezo1 channel contributes to keratinocyte migration and skin wound healing
P44	Ye, Zhongjie	Unfolding of mechanosensitive channels piezo 1 and piezo 2