14.15 Welcome and brief explanation on the new format

**Plenary workshop 1**

**DEVELOPMENT: Chair P. Blader**

- **Patrick Blader:** Coupling neural fate determination with morphogenetic movements during olfactory placode development
- **Stefan Schulte-Merker:** Zebrafish axial skeleton segmentation relies on segmental expression of entpd5 in notochord sheath cells, but not on the paraxial segmentation clock
- **Paola Bovolenta:** Specification of the retina pigment epithelium and its implication in vertebrate optic cup morphogenesis
- **Mary C. Mullins:** Spatiotemporal regulation of metalloprotease activity shapes the BMP signaling gradient
- **Caroline S. Hill:** Long range signaling activation and local inhibition separate the mesoderm and endoderm lineages
- **Christian Mosimann:** A conserved regulatory program drives emergence of the lateral plate mesoderm

14.30 - 16.00

Coffee break

16.00 - 16.30

IZFS Streisinger award and Keynote lecture: Prof. Christiane Nüsslein-Volhard (Nobel Laureate)

16.30 - 18.00

**How fish colour their skin: A paradigm for development and evolution of adult patterns**

Social event at Muse

**Wednesday 21 March**

**Povo 2**

**Plenary workshop 2 (EPI)GENOME AND TRANSCRIPTIONAL REGULATION. Chair: N. Vastenhouw**

9.00 - 10.30

- **Nadine Vastenhouw:** Transcription establishes microenvironments that organize euchromatin
- **Ferenc Mueller:** In vivo imaging of native gene transcription reveals the cell cycle coordination of the first wave of zygotic gene activity before global
activation of the zygotic genome

René F. Ketting: Zygotic activation of the zebrafish piRNA pathway in primordial germ cells

Yun-Jin Jiang: Udu/GON4L is involve in DNA Replication by Regulating CDC6 Expression and Participating in Pre-replication Complex Formation

Charles G. Sagerström: TALE Factors Control an Embryonic Gene Expression Program using Distinct Functional Modes at Early versus Late Developmental Stages

Juan Ramón Martínez Morales: cis-regulatory logic of Shh expression reveals common history of unpaired and paired fins

10.30 - 11.00 Coffee break

Plenary workshop 3
TECH-SHOP: GENETIC ENGINEERING, SCREENING AND PLATFORMS. Chair: C Mosimann
Length of presentations to be indicated soon by your chair.

Christian Mosimann: Intro and re-occurring problems in zebrafish transgenesis.
Andy Willaert: CRISPR/Cas9-mediated homology-directed repair by ssODNs in zebrafish: not an error-free process
Didier Stainier: Genetic compensation and transcriptional adaptation
Elisabeth Busch-Nentwich: An mRNA expression screen of zebrafish neural crest mutants identifies dose-dependent compensation and new tfap2 and sox10 targets
Ana Catarina Certal: CONGENTO – A New Consortium for Genetically Tractable Organisms: the zebrafish perspective
Martin Distel: The Austrian Zebrafish Disease Model Compound Screening Platform
Ravindra Peravali: Automated and high-throughput screening platforms for assessing early zebrafish behavior.
Robert Geisler: Production, archiving and mapping of zebrafish lines at the EZRC.

11.00 - 12.30 Lunch

TECHNICAL HIGHLIGHTS (Chair S. Casarosa).

T. Sala: Tecniplast
A. Barbot: Viewpoint
R. Bongaarts: Union Biometrica
W. Pinto: Sparos
S. Lacerenza: Fujifilm
V. Bonfardin: MAVIG
V. Adami: CIBIO Facilities
B. Göppert: Acquifer
R. Tegelenbosch: Noldus
S. Nerl: Thorlabs
A. Casini: CRISPR/Cas9 CIBIO spin-off initiative

13.30 - 14.30 EUFishBioMed General Assembly (Chair U. Strahle)

Concurrent workshop 1 Room A
MORPHOGENESIS. Chair: C. Norden
Format of workshop to be discussed with your chair

Steffen Scholpp: Imaging morphogenesis, recent advances and challenges
Marie Breau: Mapping forces in time and space in the developing zebrafish
embryo, what do we need, what can we learn?

**Cristina Pujades:** Understanding spatio-temporal cell specification and differentiation alongside morphogenesis

**Gil Levkowitz:** Challenges and opportunities in the study of neurovascular development

**Steve Wilson:** How do early phenotypes disappear at later developmental stages? Roads to understand developmental robustness...

**Lucia Poggi:** Adult tissue morphogenesis during growth, regeneration and disease. How can it be studied in vivo?

**Caren Norden:** Organoids as model tissue: opportunity, threat, hoax or all of the above for zebrafish research?

**Concurrent workshop 2 Room B**

**METABOLISM. Chair:** P. Gut

**Herman P. Spaink:** The advantages of zebrafish larvae for system metabolomics

**Thomas Dickmeis:** Differential rescue of metabolic alterations in a zebrafish model of adrenal insufficiency by glucocorticoid treatment

**Philipp Gut:** Exercise biology in zebrafish

**Nikolay Ninov:** Modelling beta-cell inflammation in zebrafish identifies a natural product for human beta-cell protection

**Yi Feng:** Live imaging studies of metabolic change in pre-neoplastic cells and the host inflammation response in a zebrafish tumour initiation model

**Massimo Santoro:** Zebrafish as model system to study metabolism and metabolic pathways

**Concurrent workshop 3 Room C**

**GENOMICS Chair:** F. Mueller

**Cecilia Winata:** Genomics dissection of the zebrafish heart

**Robert Kelsh:** Single cell expression profiling identifies pigment cell differentiation trajectories from partially-restricted intermediate pigment progenitor cell

**Lior Appelbaum:** Sleep regulates chromosome dynamics and nuclear maintenance in single wake-active neurons

**Shawn M. Burgess:** De Novo Assembly of the Zebrafish and Goldfish Genomes Using a Combination of PacBio and 10X Genomics Sequencing Approaches

**Boris Lenhard:** Topologically associated domains and extreme noncoding conservation: connections and consequences

**Carsten O. Daub:** Zebrafish sequencing data collection and annotation with the DANIO-CODE Data Coordination Center

**Concurrent workshop 4 Room A**

**LR ASYMMETRY & CILIA. Chair:** Susana Lopes

**Susana S. Lopes:** Dand5 and Nicalin1: two Nodal signalling inhibitors compared de novo in the Left-Right context

**Maximilian Fürthauer:** Myosin1D is an evolutionarily conserved determinant of animal Left/Right asymmetry.

**Thomais Papamarcaki:** The function of SET/12PP2A in ciliogenesis; lessons from the zebrafish

**Nathalie Jurisch-Yaksi:** The function of motile-cilia driven flow in the
nervous system

**Matthias Carl**: It’s about timing: Left-right asymmetric habenular neural circuit development

**Melanie Philipp**: Tight control of mitochondrial function prevents heart defects through faithful ciliogenesis

**Concurrent workshop 5  Room B**
**(CARDIO)VASCULAR. Chair: M. Santoro**

**Daniela Panáková**: AKAP2-PKA compartmentalization by alternative Wnt/GPCR signaling regulates L-type Ca2+ channel

**Wiebke Herzog**: Wnt signaling regulates vascular pattern formation and anastomosis during brain angiogenesis

**Arndt F. Siekmann**: Duplicated vegfa genes control early central nervous system vascularization

**Monica Beltrame**: Perturbed vegf-C signalling enhances lymphatic defects in sox18 mutants, as in sox18 morphants

**Brant Weinstein**: A Novel Endothelium-Derived Perivascular Cell Population in the Zebrafish Brain

**Natascia Tiso**: Characterization of stable zebrafish models for Arrhythmogenic Cardiomyopathy Type B; towards the identification of early pathogenetic events and new therapeutic targets

**Concurrent workshop 6  Room C**
**GERM CELLS. Chair: R. Dosch**

**Yaniv M Elkouby**: From the stem cell to the follicle: novel cellular mechanisms of oocyte differentiation by a centrosome organizing center

**Florence L. Marlow**: Contribution of intronic sequences to regulation of germline RNAs

**Andrea Pauli**: Small proteins with big roles: Bouncer enables sperm entry during fertilization in vertebrates

**Virginie Lecaudey**: The Hippo Pathway effector Taz is required for the formation of the Micropyle in Zebrafish

**Roland Dosch**: Functional Conservation of the Zebrafish Germ Plasm Organizer Bucky ball and Drosophila Oskar

**Erez Raz**: The role of the Vertebrate Protein Dead End in controlling Primordial Germ Cell Fate.

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**Free Evening**

**Thursday 22 March**

**Povo 2**

**Plenary workshop 4**
**(NEURO)DISEASE MODELS. Chair: Bettina Schmid**

**Massimiliano Andreazzoli**: Modeling human intellectual disability and autism: role of the chromatin regulator setd5 during zebrafish brain development

**Christoph Winkler**: Splicing analysis in a zebrafish model for Spinal Muscular Atrophy identifies transcripts important for motor neuron and Schwann cell function

**Bettina Schmid**: Loss of TDP-43 impairs endothelial sprouting and migration via increased fibronectin 1, vcam 1 and integrina 4/b1 expression

**Nadia Soussi-Yanicostas**: Interaction between microglia and epileptic neurons in a genetic zebrafish model of epilepsy

**Emre Yaksi**: Studying neural circuit activity and connectivity during
epileptogenesis in zebrafish brain

Daniela Zizioli: The pank2 knock-out zebrafish line: a model to study the PKAN disease and the defects in coenzyme A biosynthesis (Flash presentation, 5 min)

Simona Casarosa: Role of extracellular matrix proteins in retinal degenerations (Flash presentation, 5 min)

10.30 - 11.00  
Coffee break

Plenary workshop 5

IMAGING. Chair: Albrecht Haase

Albrecht Haase: 3D and 4D in vivo imaging and image reconstruction methods to study neuronal development in Zebrafish larvae via two-photon microscopy.

Elizabeth Carroll: Adaptive optics for precision two-photon optogenetics in zebrafish

11.00 - 12.30

Owen J. Tamplin: Correlative Lightsheet and Electron Microscopy of the Larval Zebrafish Kidney

Francesco Vanzì: Whole-brain calcium activity measurements in zebrafish models of neurological disorders, basic research and application to novel drug screening methods

Robin A. Kimmel: In vivo imaging of emerging endocrine cells reveals a requirement for PI3K-regulated motility in pancreatic islet morphogenesis

Sophie Vriz: Tissue homeostasis is controlled by a feedback loop between nerves and H2O2 signaling in zebrafish

13.00 - 14.00

Lunch

Concurrent workshop 7  Room A

AGING, DDR & CANCER. Chair: M. Mione

Freek van Eeden: Analysis of Von Hippel Lindau function in zebrafish

Kathleen BM Claes: Uncovering the role of atm in zebrafish

Catarina M. Henriques: Gut-associated leukocytes have telomerase-dependent hyper-long telomeres and require telomerase for efficient phagocytosis

Michela Ori: Generation of new in vivo tools to study healthy and pathological aging of nervous system (Flash presentation, 5 min)

Miguel Godinho Ferreira: Telomere shortening increases cancer incidence in a non-cell autonomous manner

Marina Mione: A preclinical zebrafish model of brain tumor with alternative mechanisms of telomere maintenance (ALT)

Rita Fior: Human tumor cell interactions and innate immune evasion in the zebrafish xenograft model

14.00 - 15.30

Concurrent workshop 8  Room B

HEMATOPOIESIS. Chair: E. Trompouki

Martin Gering: Gfi1aa and Gfi1b set the pace for primitive erythropoiesis

Trista E. North: Biophysical Induction of YAP Activity Regulates Hematopoietic Stem Cell Production

Eirini Trompouki: A metabolic interplay coordinated by HLX balances hematopoietic stem cell differentiation

Emma de Pater: The role of the Gata2 transcriptional program in familial MDS/AML

Han Wang: Ezh2 promotes clock function and hematopoiesis independent of histone methyltransferase activity in zebrafish

Petr Bartunek: Kit signaling in erythroid cell development (Flash presentation, 5 min)
Concurrent workshop 9  Room C
NEURAL CIRCUITS. Chairs: F. del Bene & I. Bianco

Soojin Ryu: Developing a zebrafish model to identify stress resilience mechanisms
Filippo del Bene: An inter-hemispheric neural circuit in the zebrafish optic tectum required for efficient prey hunting
Konstantinos Ampatzis: What is inside the adult zebrafish spinal cord? Large scale analysis of the diversity, complexity and dynamics of spinal cord neurotransmitter typology
Herwig Baier: Neural circuits for prey recognition and hunting behavior in zebrafish
Koichi Kawakami: The amygdalar and hippocampal functions in zebrafish
Yoav Gothilf: Characterization of two zebrafish AgRP neuronal systems reveals new functions
Stephan C.F. Neuhaus: Glutamate Homeostasis in the Retina

15.30 - 16.00

Coffee break

Concurrent workshop 10  Room A
CANCER. Chair: Ewa Snaar-Jagalska

Ewa Snaar-Jagalska: Mechanical transduction mediated by Integrin-ILK dependent actin dynamics drives stem-plasticity leading experimental metastatic colonization of prostate cancer
Kimble Frazer: A New MYC-Driven D. rerio Precursor-B Cell Acute Lymphoblastic Leukemia Model
Zhiyuan Gong: Leptin induces muscle wasting in a kras-induced hepatocellular carcinoma model in transgenic zebrafish
Wolfram Goessling: Estrogenic activation of the G protein coupled receptor GPER1 regulates PI3K/mTOR signaling to promote normal and malignant liver growth
Jeroen den Hertog: Modeling RASopathies in zebrafish
Manfred Schartl: Epigenetic regulation of gene expression in premalignant pigment cell lesions and melanoma

Concurrent workshop 11  Room B
IMMUNITY & INFLAMMATION. Chair: B. Bajoghli

Baubak Bajoghli: A fish model to understand spatial and temporal aspects of T-cell development
Paul Martin: Investigating inflammation in the contexts of wound healing and cancer
Rebecca J. Richardson: Specific macrophage populations coordinate cardiac scarring and subsequent regeneration in adult zebrafish
Thomas Becker: Macrophage-mediated control of IL-1beta is essential for spinal cord regeneration in zebrafish.
Jean-Pierre Levraud: Tissue-specific control of viral infection in zebrafish by the interferon response
Astrid van der Saar: Mycobacteria employ two different mechanisms to cross the blood-brain barrier

Concurrent workshop 12  Room C
STEM CELL PLASTICITY. Chair: Caghan Kizil

Laure Bally-Cuif: Single cell and population mechanisms of adult neural stem cell maintenance
Caghan Kizil: Neural stem cell plasticity in neurodegeneration models of
adult zebrafish brain

**Francesco Argenton**: Phosphorylation of Y705 is needed for mitochondrial Stat3 mediated control of intestinal stem cells proliferation.

**Anna Jaźwińska**: CNTF stimulates cardioprotection and the proliferative activity in the zebrafish heart

**Robert Knight**: Dissecting the regulation of muscle stem cells during regeneration by live cell imaging in the zebrafish

18.00 – 23.00 leaving for Cantine Rotari x Aperitivo and Dinner

**Friday 23 March**

**Dept. Lettere**

**Plenary workshop 6**:  
9.00 - 10.30 Highlights from Concurrent workshops.  
(5 min each workshop chair (12) + Discussion)

10.30-11.00  
Coffee break

**Plenary workshop 7**  
REGENERATION. Chair: N. Mercader

**António Jacinto**: Regulation of dedifferentiation in zebrafish caudal fin regeneration

**Michael Brand**: Neuroinflammation is critically required as a cue for regeneration of the adult zebrafish retina

**Dimitris Beis**: Re-activation of Notch signaling is required for cardiac valve regeneration

11.00 – 12.45

**Lieve Moons**: Dendritic retraction is a prerequisite for efficient axonal regeneration in the adult zebrafish retinotectal system

**Peter Currie**: The role of distinct populations of muscle stem cells during regeneration and organ growth.

**Leonor Saude**: Modulation of vascular repair during spinal cord regeneration

**Nadia Mercader**: Tbx5a lineage tracing shows cardiomyocyte plasticity during zebrafish heart regeneration

12.45 – 13.30 Community session overview, future plans and closure  (Chair F. Argenton)