

## PRELIMINARY PROGRAM

### 5<sup>th</sup> European Zebrafish PI Meeting

Tuesday 20  
March 18 (dept.  
Lettere)

14.15 Welcome and brief explanation on the new format

#### Plenary workshop 1

DEVELOPMENT: Chair P. Blader

14.30 - 16.00

**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

16.00 - 16.30

Coffee break

16.30 - 18.00

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

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

Social event at Muse

### Wednesday 21 March

#### Povo 2

9.00 - 10.30

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

**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 involved 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

11.00 - 12.30

**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.

12.30 - 13.30

Lunch

TECHNICAL HIGHLIGHTS (Chair S. Casarosa).

**T. Sala:** Tecniplast

**A. Barbot:** Viewpoint

**R. Bongaarts:** Union Biometrica

**W. Pinto:** Sparos

13.30 - 14.30

**S. Lacerenza:** Fujifilm

**V. Bonfardin:** MAVIG

**V. Adami:** CIBIO Facilities

**B. Göppert:** Acquirer

**R. Tegelenbosch:** Noldus

**S. Nerl:** Thorlabs

**A. Casini:** CRISPR/Cas9 CIBIO spin-off initiative

14.30 - 15.00

EUFishBioMed General Assembly (Chair U. Strahle)

**Concurrent workshop 1 Room A**

MORPHOGENESIS. Chair: C. Norden

15.00 - 16.30

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. Spink:** 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

15.00 - 16.30

### 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

15.00 - 16.30

16.30 - 17.00

Coffee break

### 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/I2PP2A in ciliogenesis; lessons from the zebrafish

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

17.00 - 18.30

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 Ca<sup>2+</sup> 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

**Nataschia Tiso:** Characterization of stable zebrafish models for Arrhythmogenic Cardiomyopathy Type 8; 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.

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

9.00 - 10.30

**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 integrin 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 Vanzi:** 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 Vrizz:** 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:** Gfi1a 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. Neuhauss:** 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

16.00 - 17.30

### 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 Levrud:** 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

9.00 - 10.30

#### Plenary workshop 6:

Highlights from Concurrent workshops.  
(5 min each workshop chair (12) + Discussion)

10.30-11.00

Coffee break

#### Plenary workshop 7

REGENERATION. Chair: N. Mercader

11.00 – 12.45

**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

**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)