PROGRAMME

Monday, September 12, 2011

10.00 – 2.00 Registration at Evangelische Akademie Tutzing

SET UP POSTERS

12.30 LUNCH

2.00 THOMAS C. G. BOSCH AND THOMAS W. HOLSTEIN
Welcome to "Searching for Eve: basal metazoans and the evolution of multicellular complexity"

PHYLOGENOMICS AND GENOME PROJECTS

(CHAIR: ROBERT E. STEELE, Irvine)

2.15 SHINZATO, CHUYA (Okinawa)
Genome sequencing of the coral *Acropora digitifera*

2.35 FORET, SYLVAIN (Townsville)
The Australian coral genome project

2.55 CARTWRIGHT, PAULYN (Lawrence)
New insights into hydrozoan phylogeny and evolution

3.15 COFFEE

3.45 ADAMSKI, MARCIN (Bergen)
Genome of *Sycon ciliatum* reveals differences between developmental toolkits of the Demospongia and the Calcarea

4.00 OSIGUS, HANS-JÜRGEN (Hannover)
A phylogenomics approach to resolve conflicts at the base of the metazoa

4.15 NOSENKO, TETYANA & GERT WÖRHEIDE (Munich)
Phylogenomics of non-bilaterian metazoans

4.30 JOHANSEN, STEINAR (Tromsø)
Deep sequencing genomics and transcriptomics in cold-water coral animals

4.45 PANG, KEVIN (Hawaii)
The genome of *Mnemiopsis leidyi* (Ctenophora) and early animal evolution

5.00 FREDMAN, DAVID (Wien)
The *Nematostella vectensis* transcriptome

5.15 ÖZBEK, SUAT (Heidelberg)
Cellular and molecular analysis of the *Nematostella vectensis* cnidom

5.35 *RELAX AND ENJOY THE PARK*

7.00 DINNER

8.30 **EVENING SESSION I**

INVITED LECTURE I

(CHAIR: THOMAS H. HOLSTEIN, Heidelberg)

NORI SATOH (Okinawa)
On the origin and evolution of chordates: Lessons from their genomes

9.45 *KNOW ABOUT EACH OTHER IN THE BAR*

Tuesday, September 13, 2011

DEVELOPMENT AND REGENERATION I

(CHAIR: MONIKA HASSEL, Marburg)

8.30 MARTINDALE, MARK (Hawai)
The role of hox genes in the development of *Nematostella vectensis*

8.50 GLASAUER, STELLA (Innsbruck)
Myc genes in *Hydra* and their involvement in ancestral signalling pathways

9.05 TORTIGLIONE, CLAUDIA (Pozzuoli)
Elucidating the role of *Hymyc1* protooncogene in *Hydra* by RNA interference

9.20 FUNAYAMA, NORIKO (Kyoto)
Pattern formation of freshwater sponge*, Ephydatia fluviatilis*

9.35 COFFEE

10.05 HOBMAYER, BERT (Innsbruck)
SFRP1/2/5 acts in specification of the aboral pole of the cnidarian oral-aboral body axis

10.25 BÖTTGER, ANGELIKA (München)
Notch signalling is involved in hydra head patterning and regeneration

10.45 HASSE, CHRISTIAN (Marburg)
Signaling by the Kringelchen FGFR induces tissue constriction also outside the budding zone

11.00 WATANABE, HIROSHI (Heidelberg)
TGF-beta signaling in *Hydra* axis formation

11.15 KANSKA, JUSTYNA (Galway)
An ancient role for Nanos in axial patterning

11.30 LEININGER, SVEN (Bergen)
Expression of germ cell markers in the calcareous sponge *Sycon ciliatum*

11.45 *RELAX AND ENJOY THE PARK*

12.30 LUNCH

DEVELOPMENT AND REGENERATION II

(CHAIR: MARK Q. MARTINDALE, Hawai)

2.00 DUBUC, TIMOTHY (Hawaii)
The process of wound healing in *Nematostella vectensis*

2.15 GHANEKAR, YASHODA (Bangalor)
miRNA-mediated regulation of hydra regeneration

2.30 SCHWAIGER, MICHAELA (Wien)
Identification of gene regulatory elements in *Nematostella vectensis*

2.45 KRAUS, JOHANNA (Wien)
A mesoderm in cnidarians?

3.00 COFFEE

3.30 SARRAZIN, ANDRES (Paris)
Molecular and developmental mechanism of metamerism (Bilateria) and comb seriation (Ctenophora): are they deeply homologous?

3.45 BECKMANN, ANNA (Heidelberg)
Cnidoin – a novel elastic protein from *Hydra* expressed in nematocytes

4.00 FRAUNE, JOHANNA (Würzburg)
Hydra meiosis reveals unexpected conservation of structural synaptonemal complex proteins

WNT SIGNALLING AND THE EVOLUTION OF METAZOAN AXIS FORMATION

(CHAIR: NORIKO FUNAYAMA, Kyoto)

4.15 HOLSTEIN, THOMAS (Heidelberg)
Wnt Gene Evolution: Canonical and non-canonical functions of cnidarian Wnts

4.35 ADAMSKA, MAJA (Bergen)
Surprisingly complex Wnt signaling pathway in *Sycon ciliatum*, a Calcareous sponge

4.55 RÖTTINGER, ERIC (Hawaii)
Initiating the cnidarian "endomesodermal" gene regulatory network (GRN): An ancient role for the Wnt/ß-catenin pathway

5.15 MEINHARDT, HANS (Tübingen)
Models for the generation of Wnt-Code – like patterns

5.35 *RELAX AND ENJOY THE PARK*

7.00 DINNER

EVENING SESSION II: GASTRULATION

(CHAIR: ULI TECHNAU, Vienna)

8.00 OKUBO, NAMI (Yokohama)
Coral gastrulation patterns and phylogeny – a comparative and molecular approach

8.15 SINIGAGLIA, CHIARA (Bergen)
A conserved patterning system controls the development of the aboral pole of Cnidaria and the anterior pole of Bilateria

8.30 KAANDORP, JAAP (Amsterdam)
Cell-based modelling of gastrulation of *Nematostella vectensis* and *Acropora millepora*

8.45 ROOPIN, MODI (Ramat Gan)
Evaluation of melatonin appearance in a model cnidarian

9.00 *KNOW ABOUT EACH OTHER IN THE BAR*

Wednesday, September 14, 2011

TRACING THE ORIGINS OF STEM CELLS

(CHAIR: MATHEW NICOTRA, Pittsburgh)

8.30 BÖHM, ANNA MAREI (Kiel)
Stem cell proliferation and differentiation in *Hydra*

8.50 MANUEL, MICHAEL (Paris)
Spatially ordered cell differentiation from localised stem cell populations in non-bilaterian body plans: lessons and perspectives from *Clytia hemisphaerica* (Hydrozoa, Cnidaria) and *Pleurobrachia pileus* (Ctenophora)

9.10 PLICKERT, GÜNTER (Köln)
Migration and differentiation of stem cells in *Hydractinia echinata*

9.30 FRANK, URI (Galway)
Induced stem cell neoplasia in *Hydractinia* by ectopic expression of Polynem: a POU domain transcription factor

9.50 COFFEE

10.20 JULIANO, CELINA (New Haven)
Investigating Piwi function in *Hydra* stem cells

10.40 DOMAZET-LOSO, TOMISLAV (Kiel/ Zagreb)
Molecular signatures of tumors in *Hydra*

11.00 **INVITED LECTURE II**

(CHAIR: THOMAS BOSCH, Kiel)

XIE, TING (Stowers, Kansas)
Stem cells: from basic biology to potential application

12.30 LUNCH

CELL BIOLOGY AT THE BASE OF ANIMAL EVOLUTION

(CHAIR: DIANE BRIDGE, Elizabethtown)

2.00 GIBSON, MATT (Stowers, Kansas)
Control of epithelial cell shape and proliferation: from flies to cnidarians

2.15 CHEVALLERIE VON DER, KAROLIN (Hannover)
Evolution of apoptosis and cell profileration in animals: Genetic studies on the placozoan *Trichoplax adhaerens*

2.30 HOULISTON, EVELYN (Villefranche-sur-mer)
Luminescence transfer and mitochondrial targeting of endogenous GFP and luminescent proteins in *Clytia hemisphaerica*

2.45 SALVENMOSER, WILLI (Innsbruck)
New aspects of cellular ultrastructure in *Hydra*

3.00 TAKAKU, YASUHARU (Hamamatsu)
Innexin gap junctions coordinate contractile behaviour in hydra polyps

3.15 NICKEL, MICHAEL (Jena)
The evolution of contractility in basal metazoans – lessons from Porifera and Placozoa

3.30 COFFEE

FUNCTION AND EVOLUTION OF NERVOUS SYSTEMS

(CHAIR: GABY KASS-SIMON, Rhode Island)

3.45 LAYDEN, MICHAEL (Hawaii)
Investigating proneural gene function in during neural development of the cnidarian sea anemone *Nematostella vectensis*

4.00 HAMADA, SHUN (Fukuoka)
Distribution pattern of hydra synapsin revealed heterogeneity of synapses in the hydra nervous system

4.15 KOIZUMI, OSAMU (Fukuoka)
Nerve ring of cnidarians: Is it a CNS (central nervous system)-like neuronal structure?

4.30 SHIMIZU, HIROSHI (Mishima)
Behavioral analysis of hydra: peduncle nervous system plays dominant role in locomotory behavior of hydra

5.00 – 8.00 **BOAT EXCURSION AND BAVARIAN BUFFET ON STARNBERGER SEE**

8.00 – 10.00

POSTER PRESENTATIONS

(WITH WINE AND BEER)

PHYLOGENOMICS AND GENOME PROJECTS (P)

P1 FREDMAN, DAVID (Wien)
The *Nematostella vectensis* transcriptome

P2 KOBAYAKAWA, YOSHITAKA (Fukuoka)
Molecular phylogenetic study on green hydra and its symbionts, *Chlorella* species

P3 KOBAYAKAWA, YOSHITAKA (Fukuoka)
Molecular phylogenetic study in genus *Hydra*

P4 SUGA, HIROSHI (Barcelona)
What's happening in the pre-metazoan world? – Recent progresses on genomics and functional analyses of filastereans and ichtyosporeans

P5 MARTINEZ, DANIEL (Claremont)
Origin and diversification of Hawaiian Hydra

P6 PLICKERT, GÜNTER (Köln)
Sequencing the *Hydractinia* genome

SPONGES (SP)

SP1 LEYS, SALLY (Edmonton)
Sponges are epithelial animals – the role of Wnt

SP2 FORTUNATO, SOFIA (Bergen)
Developmental transcription factors in the calcareous sponge *Sycon ciliatum*

SP3 NICKEL, MICHAEL (Jena)
Our favorite animal *Tethya wilhelma*: A new model for functional studies on sponges

SP4 NAKATA, YUDAI (Tokyo)
Investigation of the molecular mechanism that recruit spicules to their holding-up points

SP5 MANO, AKIRA (Kyoto)
Identification of a gene that encodes preprohormone of amidated peptides in *Ephydatia fluviatilis*

GENES AND DEVELOPMENT (G)

G1 LAPEBIE, PASCAL (Villefranche-sur-mer)
Identification of novel regulators of *Clytia hemispherica* early development using a transcriptomics approach

G2 PETERSEN, HENDRIK (Heidelberg)
Large scale proteome and phosphoproteome analysis of regeneration in *Hydra*

G3 STROMPEN, JENNIFER (Heidelberg)
Proteomic Analysis of the cnidarian mesoglea: composition of the extracellular matrix at the base of multicellularity

G4 GIBSON, MATT (Kansas)
IKNM: Balancing mitosis and morphogenesis during epithelial cell division in *Drosophila melanogaster* and *Nematostella vectensis*

G5 SALVENMOSER, WILLI (Innsbruck)
Development of epithelial cell polarity in *Hydra* aggregates

G6 QUEINNEC, ERIC (Paris)
Contributions of Myosin Heavy Chain II genes studies to muscle evolution: a ctenophore perspective

G7 GUERTIN, STEPHANIE (Kingston)
Expression of Pax B in *Hydra vulgaris*

G8 EDER, DOMINIK and JENEWEIN, MARCEL (Innsbruck)
The homeobox gene *Hydlx2* acts in foot cell differentiation in *Hydra*

G9 KANSKA, JUSTYNA (Galway)
Generating a monster by an oncogene: Myc ectopic expression in *Hydractinia*

G10 IKMI, AISSAM (Kansas)
Evolutionary origin of the oncogene Yap

G11 POSTMA, MARTEN & DATTOLI, ANNA ADA(Amsterdam)
Computational modelling of cnidarian embryogenesis

G12 BOTMAN, DANIEL (Amsterdam)
An integrated approach to infer the gene network in early development of the cnidarian *Nematostella venctensis*

G13 SOMORJAI, ILDIKO (Barcelona)
Amphioxus provides insight into regeneration at the invertebrate-vertebrate transition

G14 KRAUS, YULIA (Moscow)
Planula larva of the marine hydroid *Dynamena pumila*: a case of highly diverged metamorphosis

G15 HENSEL, KATRIN (Galway)
Qualitative and quantitative assessment *Hydractinia* cells by flow cytometry and fluorescence activated cell sorting

G16 MARCHESANO, VALENTINA (Pozzuoli)
Probing membrane dynamics in *Hydra* at single-nanoparticle level

G17 MATTERA, LUCIA & AMBROSONE, ALFREDO (Pozzuoli)
Hydra vulgaris for nanoecotoxicology: from in vivo studies to the molecular pathways

G18 GLAUBER, KRISTINE (Irvine)
Small molecule screen reveals a novel compound that induces a homeotic transformation in *Hydra*

G19 ANTON-ERXLEBEN, FRIEDERIKE (Kiel)
Visualization of multipotent stem cells and their derivatives in the basal metazoan *Hydra*

G20 KLIMOVICH, ALEXANDER (Kiel)
The stem cell niche in Hydra

G21 BARREAU, CARINE (Villefranche-sur-mer)
Maternal localised germ plasm mRNAs in the cnidarian *Clytia hemisphaerica*

G22 SIMMONS, DAVID (Hawaii)
Basic helix-loop-helix (bHLH) genes in the ctenophore *Mnemiopsis leidyi*: New insights into the origins of basal metazoan cell type specification

G23 BÖTTGER, ANGELIKA (Munich)
Apoptosis in *Hydra*: Same but different

G24 MÜNDER, SANDRA (Munich)
Identification and characterization of genes associated with the Notch pathway in *Hydra*

G25 LECLÈRE, LUCAS (Bergen)
Interaction of FGF signaling and Wnt pathway components in the patterning of the aboral pole during *Nematostella* embryonic development

G26 HASSE, CHRISTIAN (Marburg)
Signaling by the Kringelchen FGFR induces tissue constriction also outside the budding zone

G27 HASSEL, MONIKA (Marburg)
Naturally occurring autotomy in a *Hydra* strain is suppressed by the FGFR inhibitor SU5402

G28 HATTA, MASAYUKI (Tokyo)
Morphallaxis and epimorphosis of the planula larva of the coral *Acropora*

G29 MARFENIN, NICOLAY (Moscow)
Selection of hidden morphotypes in the colonial hydroid *Dynamena pumila*

G30 WANG, WEI (Kiel)
Analysis of signaling cascades regulating strobilation in *Aurelia aurita*

G31 RINGELHAN, FELIX (Rostock)
Aging in basal metazoans – a biodemographic approach

G32 SAI SUDHA, PURUSHOTHAMAN (Bangalore)
Oxidative stress, antioxidants and *Hydra* longevity

SYMBIOSIS AND DEFENCE (SY)

SY1 AGUILERA, ALEXYA & CHEN, GANG (Claremont)
Hydra viridissima and its algal endosymbionts

SY2 FRAUNE, SEBASTIAN (Kiel)
Bacterial colonization in the cnidarian *Hydra viridissima* is controlled by the host tissue and not the algae symbiont

SY3 FRANZENBURG, SÖREN (Kiel)
The ancient function of TLR-signaling in maintaining host-bacteria homeostasis

SY4 FRANZENBURG, SÖREN (Kiel)
AMP gene diversification contributes to host specific bacterial colonization

SY5 GRASIS, JURIS (San Diego)
Deciphering the *Hydra* virome

SY6 PERNICE, MATHIEU (St. Lucia)
Unveiling nitrogen cycling in cnidaria-dinoflagellate symbiosis

NERVOUS SYSTEMS (N)

N1 HAMADA, SHUN (Fukuoka)
Distribution pattern of Hydra synapsin revealed heterogeneity of synapses in the Hydra nervous system

N2 HUFNAGEL, LINDA & KASS-SIMON, GABRIELE (Rhode Island)
Circumferential nerve rings in the hypostome of *Hydra vulgaris*

N3 JAGER, MURIEL (Paris)
Neuroanatomy study by immunofluorescence on the cnidarian *Clytia hemisphaerica*

N4 MINOBE, SUMIKO (Fukuoka)
Searching for the genes related to the nerve net formation in *Hydra*

N5 MORAN, YEHU (Wien)
Localization of neurotoxins to ectodermal gland cells uncovers an alternative mechanism of venom delivery in sea anemones

N6 RICHARDS, GEMMA (Bergen)
Expression and function of SoxB2 in *Nematostella* neurogenesis

N7 WATANABE, HIROSHI (Heidelberg)
A Function of beta-catenin signaling in *Nematostella* neural induction

N8 SHIMIZU, HIROSHI (Mishima)
Behavioral analysis of hydra: examination of tactic movements in hydra in response to environmental stimuli

Thursday, September 15, 2011

ALLORECOGNITION, EPITHELIAL DEFENSE AND CO-EVOLVED INTERKINGDOM INTERACTIONS

(CHAIR: EVELYN HOULISTON, Villefranche-sur-mer)

8.30 BOSCH, THOMAS (Kiel)
Metaorganisms as the new frontier

8.45 FRAUNE, SEBASTIAN (Kiel)
Host derived mechanisms controlling host-bacterial homeostasis at the epithelial interface in *Hydra*

9.00 LACHNIT, TIM (Kiel)
The viral world of *Hydra*

9.15 MILLER, DAVID (Townsville)
Dissecting the early transcriptional immune response of *Acropora millepora* using high-throughput sequencing

9.30 POOLE, ANGELA (Corvallis)
Characterization and evolution of molecules involved in cnidarian dinoflagellate symbiosis

9.45 COFFEE

10.15 OREN, MATAN (Ramat Gan)
Immunophilins expression during allogeneic rejection response in marine vertebrates and its associated highly conserved immunosupression mechanism

10.30 NICOTRA, MATTHEW (Pittsburgh)
Molecular characterization of the *Hydractinia symbiolongicarpus* allorecognition system

EVOLUTIONARY AND FUNCTIONAL INSIGHTS IN LIFE CYCLE CONTROL

(CHAIR: DAVID MILLER, Townsville)

10.45 KHALTURIN, KONSTANTIN (Kiel)
How to make a jellyfish: glimpse into the evolution of life cycles

11.00 NAWROCKI, ANNALISE (Lawrence)
Phylogenetic, developmental and gene expression data reveal a unique form of coloniality in *Ectopleura* (Cnidaria: Hydrozoa: Aplanulata)

11.15 LEVY, OREN (Ramat Gan)
The complexity of circadian clocks in symbiotic corals

11.30 SCHAIBLE, RALF (Rostock)
Hydra – life in the absence of senescence

11.45 MARTINEZ, DANIEL (Claremont)
Negligible and inducible senescence in *Hydra*

12.00 **GENERAL DISCUSSION AND CONCLUDING REMARKS**

Take down posters!

12.30 LUNCH

DEPARTURE