

BIO-info 17/2011, 6. mai 2011 [BIO: sakslister og møtereferater](#) [BIO-info arkiv](#)  
submission deadline to [bio.info@bio.uib.no](mailto:bio.info@bio.uib.no) is Wednesday 16:00

## Fra toppen!

### Fagerbergutvalget

Fagerbergutvalget har levert sin innstilling «[Et åpnere forskningssystem](#)» (NOU 2011:6) denne uken. Utvalget ble nedsatt av statsråd Tora Aasland i desember 2009 for se på sammenhengen mellom mål, ressurser og resultater for den offentlig finansierte forskningen. En konkret analyse av den samfunnsøkonomiske nytten av forskningen, som utvalget hadde som mandat å utrede, har nok rapporten ikke klart å levere. Og det kan vel spørres om en slik analyse i det hele tatt er mulig, slik vår dekan er inne på i sin [dekanblogg](#).

Utvalget er likevel tydelig på at det er behov for å styrke den frie forskningen, og ønsker å gjøre det med å styrke den åpne konkurransearenaen med to milliarder kroner, blant annet gjennom å vri departementenes bidrag til forskning over mot åpne arenaer. Dette er noe vi har påpekt gang på gang i våre møter med NFR og med panelene i Biofagevalueringen, og det er hyggelig at dette forslaget kommer så tydelig fra utvalget.

Et annet forslag fra utvalget er en prøveordning for å automatisk tildele driftsmidler til de mest aktive forskerne (Forskerfunn). Et tredje forslag er å redusere forskningstiden til forskere som publiserer lite eller ingenting. Utvalget peker også på behovet for å utdanne flere doktorgradskandidater.

Innstillingen blir nå sendt ut til høring, så alle som har en mening om norsk forskningspolitikk kan få gitt sitt besyv med.

Hilsen Anders



## Ukens bilde



### The Troll

Fotograf: **Sergej Olenin**

During field excursion to coastal mountains you may see not only natural objects. Just look at this troll, his eyes, mouth, arms... Well, it's good he turned to stone already.

*You are invited to submit photos (electronically!) for "Ukens bilde". Please include a very short description and credit information. Picture can be of researchers / students in action, technology, organisms, field sites ... Please send your pictures to [bio.info@bio.uib.no](mailto:bio.info@bio.uib.no)*

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### Siste nytt fra BIO

Lenhard paper in Nature Genetics; SFI vil gjerne ha forslag til logo; HIMALINE-prosjektet omtalt i Hubro;

#### **Boris Lenhard in Nature Genetics**

Boris is coauthor on a paper published online this week in Nature Genetics! The paper is entitled "Sox2 cooperates with Chd7 to regulate genes that are mutated in human syndromes" [Full text](#)

#### **Gode forslag til logo for "Sea Lice Research Centre" ønskes**

Dersom forslaget blir brukt kan det vanke ein liten premie. Ta kontakt med Frank Nilsen for nærmere info om konkurransen.

#### **HIMALINES-prosjektet i Hubro**

HIMALINES-prosjektet fikk masse omtale i [siste utgave av HUBRO](#)

## Utdanningsnytt

### Oppgradering til Windows 7 i undervisningsrom

#### **Oppgradering til Windows 7 på PC-stuer og undervisningsrom**

Informasjon til forelesere fra IT-avdelingen:

Windows-PC-ene som driftes av IT-avdelingen på UiB skal få nytt operativsystem. Hittil er det stort sett nye maskiner som har fått installert Windows 7 i stedet for Windows XP. I PC-stuer og undervisningsrom tar vi sikte på å gjøre overgangen fra Windows XP til Windows 7 i løpet av sommermånedene 2011.

Dette har som konsekvens at en del programvare må ut i ny versjon i undervisningsrommene. For eksempel vil SPSS 15.0.1 ikke virke på Windows 7, og vil bli erstattet med nyere versjon (v. 18). For å gjøre overgangen smidig anbefaler vi at alle forelesere legger opp undervisningen etter siste versjon av programvare som er Windows 7-kompatibel. IT-avdelingen henstiller derfor til foreleserne om å teste aktuell programvare og om nødvendig gå over til Windows 7 på egen PC.

Windows 7 er allerede installert på noen PC-stuer, som gjerne kan brukes til testing. Dette gjelder: Matnat: 8-10 maskiner på Faklab 1 på Realfagbygget. (Noen maskiner på Faklab 1 på HIB vil bli oppgradert etter 17. mai).

Vi gjør oppmerksom på at for en del kommersiell programvare må det kjøpes ny lisens for å kunne oppgradere til ny versjon. IT-avdelingen vil generelt anbefale at fri programvare brukes i undervisningen der det er mulig. Forespørsler om installasjon av Windows 7 og spørsmål rundt dette kan rettes til BRITA på telefon 84700 eller [bs.uib.no](mailto:bs.uib.no)

Vi gjør samtidig oppmerksom på at IT-avdelingen ønsker innspill til utrustning av undervisningsrom. IT-avdelingen har også i år fått prosjektmidler til vedlikehold av AV-utstyr i undervisningsrom, og vi tar gjerne i mot forslag til ønskede oppgraderinger.

#### **Eksamensplan H2011**

Eksamensplanen for skriftlige eksamenar blir sendt til emneansvarlege for haustens emner på e-post. Vi ber om at emneansvarlege sjekkar den føreslåtte datoen og gjer tilbakemelding til [studie@bio.uib.no](mailto:studie@bio.uib.no).

### Siste nytt fra STIM

#### New Board

##### New STIM Board

STIM is happy to inform everyone that we have a new President with a hole new set of helpers.

They are:

President: Ørjan Sørensen

Vice president: Pia Ve Dahlen

Secretary: Ragnhild Aven Svalheim

Treasurer: Stian Aspaas

Party: Kristian Ulven and Truls Hansen



The old STIM is stepping down and leaves the Master and Phd student in the weary capable hands of the new board.

We have had a wonderful year as STIM and would like to thank everyone who has made it so.

Good luck to the newbies :)

### Siste nytt fra verden rundt oss

Tjelden på taket; Three new EU research infrastructures on biological sciences; Nyhetsbrev fra Fiskeriforum vest; Kvantestprang I laksenæringen; Marin forskningsinnsats tredoblet på ti år

#### Kjellaug og Kjell er tilbake!

Tjelden på taket av Realfagbygget er tilbake og har lagt tre egg i reiret. Webkameraet er snart på plass, så følg med på [tjeld.uib.no](http://tjeld.uib.no)! Du kan også følge fuglene på [Facebook](https://www.facebook.com/tjeld.uib.no).

#### Press release: Three new EU research infrastructures on biological sciences

##### Three new EU research infrastructures on biological sciences will help tackle climate change, disease and threats to food supply

Research Ministers and the European Commission have given the green light to three new pan-European biological science research infrastructures. These extensive new facilities will help boost research and innovation on key societal challenges such as climate change, health and maintaining sufficient supplies of high quality food. The three projects will draw on resources pooled between various Member States and on EU funding. Once complete, they will be open for use by researchers from across the EU and in some cases beyond. France will coordinate an infrastructure for studying how ecosystems respond to environment and land-use changes. The United Kingdom will lead in setting up an infrastructure on systems biology with applications expected in the pharmaceutical, healthcare and agricultural sectors. The third new infrastructure, to be developed in France and Germany, will significantly enhance pan-European access to viruses, bacteria and fungi needed for research on infections affecting humans and crops, as well as for research on bio-security. These infrastructures are part of the updated Roadmap of the [European Strategy Forum on Research Infrastructures \(ESFRI\)](#) issued today. The overall investment for their construction is about €0.7 billion.

Máire Geoghegan-Quinn, European Commissioner for Research, Innovation and Science, said: "Pooling national and EU resources to build pan-European research infrastructures – rather than each Member State simply going it alone – is common sense and a key part of the EU's Innovation Union plan. These collaborative efforts create economies of scale, boost EU competitiveness and deliver better value for money for taxpayers. The biological science infrastructures we are announcing today can make a major contribution to tackling some of the toughest problems we face, including climate change and threats to human health and to our food supplies."

Today's latest additions to the ESFRI Roadmap also include three energy infrastructure projects already announced in November 2010 (see [IP/10/1615](#)).

### Three new research infrastructures in biological sciences

Biogeochemical cycles together with biodiversity are vital to climate change and food security issues. The **Infrastructure for Analysis and Experimentation on Ecosystems (ANAEE)**, coordinated by France, will overcome the current fragmentation of ecosystem research in Europe and develop a coordinated set of experimental platforms to analyse, detect and forecast the responses of ecosystems to environmental changes, and to develop appropriate management techniques. For the first time, the project will bring together the major experimental analytical and modelling facilities in ecosystems science in Europe. This will help in understanding terrestrial ecosystems, and the potential impact of climate change. The infrastructure will be in operation from 2015 onwards. The estimated costs for preparation and construction are € 210 million. Institutions from 20 Member States and Associated Countries are supporting this project.

#### Contact for ANAEE:

Lise Poulet, Chef du service Presse-Opinion

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The Infrastructure for Systems Biology-Europe (ISBE), coordinated by the United Kingdom, aims to support the convergence of life sciences with information technology and system science. In particular it will focus on systems biology connecting the best European research skills, repositories for storing and archiving data and models. This will enable researchers to address how the interaction of biological components leads to the functioning of living organisms and to create models representing these interactions. System biology will have applications in medicine, such as in the design of pharmaceuticals but also an impact on agriculture, healthcare and environment. ISBE will be in operation from 2017 on. The estimated total construction cost is about € 300 million. Organisations from 13 Member States and Associated Countries have demonstrated interest in this infrastructure.

#### Contact for ISBE:

Richard Kitney, Imperial College London

Tel +44 0 2075945184, [R.kitney@imperial.ac.uk](mailto:R.kitney@imperial.ac.uk)

The **EU Microbial Resource Research Infrastructure (MIRRI)**, coordinated by France and to be developed in France and Germany, will improve access to the best microbial resources, i.e. strains of viruses, bacteria and fungi which are the essential raw material for biotechnology. This will have a strong impact on research in the agricultural, food, healthcare and biotechnological sectors. Applications range from research on crop pathogens for sanitary and animal health reasons to research on human pathogens and bio security. MIRRI will build the European platform within the future Global Biological Resource Centre Network (GBRCN) for microorganisms. Operation of the infrastructure should start in 2014. The total construction cost is budgeted at approximately € 190 million. Institutions from 24 Member States and Associated Countries are supporting this project.

#### Contact for MIRRI:

David Smith, Julius Kühn-Institut (JKI)

Tel +49 0 531 5962298, [D.smith@cabi.org](mailto:D.smith@cabi.org)

### Background

The European Strategy Forum on Research Infrastructures (ESFRI) was set up in 2002 after the European Council endorsed a Commission working document proposing the new Forum (see [IP/02/621](#)). It comprises senior officials nominated by the Research Ministers of the 27 EU Member States and 10 Associated countries (Albania, Croatia, Iceland, Israel, Liechtenstein, Montenegro, Norway, Serbia, Switzerland and Turkey). ESFRI also includes a senior official from the European Commission. The current chair, elected for two years, is Beatrix Vierkorn-Rudolph (Germany).

The first ESFRI Roadmap was published in 2006. In all, there are 48 infrastructures in the updated Roadmap (see Annex). Of these, 10 are currently under construction at a cost of about €3.6 billion and a further 38 are foreseen. Sixteen of those are proceeding so well that construction could start by the end of 2012, thus achieving the EU's Innovation Union goal of starting to build 60% of the ESFRI

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infrastructures by 2015. The total construction cost for all the facilities in the Roadmap is estimated at some €16 billion and the operational cost would be around €1.6 billion per year.

Over the next decade ESFRI will focus mainly on the practical implementation of the infrastructures identified in the Roadmap. It will also strengthen cooperation with European research and innovation organizations and with European industry. The Forum also intends to develop an evaluation methodology for pan-European Research Infrastructures.

The ESFRI Research infrastructures are financed primarily with national funds, with support from EU budgets.

The EU's 7<sup>th</sup> Framework Programme for Research allocates for the period 2007-13 a budget of €1.7 billion to support research infrastructures, both existing and new. About € 560 million, including a € 200 million contribution to the Risk Sharing Finance Facility, of this is specifically dedicated to new infrastructures. So far about €171 million has been allocated to projects on the ESFRI Road Map for their preparatory phase. About €22.5 million has been set aside for the energy and biological science infrastructures recently added to the Roadmap.

Additional funds of up to € 10 billion are available from EU Structural Funds. Support for the construction of research infrastructures can also be obtained from the European Investment Bank in the form of loans.

### Summary of links

More information about ESFRI:

<http://ec.europa.eu/research/esfri>

More information about the Innovation Union:

[http://ec.europa.eu/research/innovation-union/index\\_en.cfm](http://ec.europa.eu/research/innovation-union/index_en.cfm)

European Commissioner for Research Innovation and Science, Máire Geoghegan-Quinn website:

[http://ec.europa.eu/commission\\_2010-2014/geoghegan-quinn/index\\_en.htm](http://ec.europa.eu/commission_2010-2014/geoghegan-quinn/index_en.htm)

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### Nyhetsbrev fra Fiskeriforum vest

Mai nyhetsbrev kan leses [her](#)

### Kvantesprang i laksenæringen



Kunnskap om laksens genom gir muligheter for å finne svar på gåtene rundt Norges rosa gull.

[Les mer](#)

### Marin forskningsinnsats tredoblet på ti år



Norge forsker nå for nesten tre milliarder kroner årlig innenfor marin sektor, viser nye tall fra NIFU. Ressursinnsatsen til marin forskning er nesten tredoblet de siste ti årene og utgjorde i 2009 nesten sju prosent av den totale norske forskningsinnsatsen.

[Les mer](#)

### Forskning: utlysninger, nye satsinger og prosjekter

Three new EU research infrastructures on biological sciences; Søker deltagere til Forsker grand Prix 2011; Forskerutveksling Frankrike og Tyskland; New Norwegian mobility funding database; Dyrevernfondet

#### Three new EU research infrastructures on biological sciences

Three new EU research infrastructures on biological sciences will help tackle climate change, disease and threats to food supply. Read the whole press release under "nytt fra verden rundt oss" in this issue of bio-info.

#### Kandidater (stipendiater) oppfordres til å med seg på Forsker Grand Prix 2011

I 2011 arrangeres Forsker Grand Prix i Bergen, Oslo, Stavanger, Trondheim og Tromsø, og det blir nasjonal finale på Den Nationale Scene i Bergen 2. oktober 2011 i regi av Norges forskningsråd.

Gode kandidater (stipendiater) oppfordres til å melde seg på **innen 8. mai**.

Les mer og gå til påmelding [her](#)

Forskningsdagens øvrige program:

Vi er også på jakt etter flere gode bidrag til Forskningsdagene 2011. Vi har fått god respons, særlig fra MOF og Mat.nat., innen påmeldingsfristen, men tar gjerne i mot flere påmeldinger for å kunne vise frem UiBs bredde på en best mulig måte. Ta kontakt så raskt som mulig (og senest innen denne uken!) med koordinator for UiBs bidrag, Gro Malnes Øvrebø, Kommunikasjonsavdelingen. Tlf. 8-38 13, e-post: gro.ovrebo@adm.uib.no. Mer informasjon på [intranett](#) under arkfane "formidling"

#### Forskerutveksling til nytt samarbeid med Frankrike og Tyskland i 2012

Norges forskningsråd v/Internasjonale stipend (IS) utlyser to forskerutvekslingsprogrammer med hhv Frankrike og Tyskland i 2012.

Vitenskapelige ansatte/forskergrupper inviteres til å søke om mobilitetsstøtte til kortvarige opphold i hhv Frankrike og Tyskland for å starte opp og utvikle felles nye forskningsprosjekter. De franske og tyske samarbeidspartnerne i prosjektene må samtidig søke og motta støtte fra hjemlandet til dekning av korte opphold i Norge. Programmene med Frankrike (*Aurora*) og Tyskland (*DAADppp*) er åpne for søknader innen alle fagområder.

Søknadsfrister:

Frankrike: 8. juni 2011

Tyskland: 31. august 2011

[Mer info](#)

#### New Norwegian mobility funding database



International researchers interested in coming to Norway and Norwegian researchers looking to work abroad for a period of time now have a new tool to help them gain an overview over relevant funding opportunities.

[Read more](#)

#### Dyrevernfondet utlyser midler for 2012

Dyrevernfondet er Dyrevernalliansens forskningsfond. Formålet er å støtte forskning av god vitenskapelig kvalitet som bidrar til å fremme dyrs interesser.

Fondet kan støtte forskning og utviklingsprosjekter på alle nivåer fra mastergrad til post doktor. Det kan også gis støtte til litteraturstudier og praktisk utprøving.

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Prosjekter innen både naturvitenskapelige fag og samfunnsfag kan være relevante. Fondet kan støtte prosjekter som direkte eller indirekte vil komme dyr til gode.

For 2011 ble det utdelt støtte til prosjekter ved blant annet Statens institutt for forbrukerforskning (SIFO), Universitetet for Miljø- og biovitenskap (UMB) og Norecopa.

Dyrevernfondet legger stor vekt på at forskningsmetodene skal være etisk akseptable, herunder ikke påføre dyr død eller lidelse.

For 2012 vil det bli utdelt totalt **250.000** kroner. Søknadsfristen er 1. september 2011. [Les mer:](#)

Husk å sende søknadsutkastet til [post@bio.uib.no](mailto:post@bio.uib.no) 1 uke i forveien (gjelder ikke mindre bevilgninger som legater og fonds)

## Kurs, møter, seminar og arrangement

Mer info om kurs, møter, seminar og arrangement etc finner du [her](#).

[Konferanseveileder fra UiB; Foredrag og diskusjon om publiserings og siterings-analyser; Frokost seminar Egget; PET chemistry meeting Bergen; Summerschool Spetses; Gjesteforelesninger SKOK;](#)

### **Konferanseveileder: En hjelp til konferanseplanleggingen**

Universitetsdirektørens kontor tok i høst initiativ til å lage en konferanseveileder. KA, POA og SA har bidratt i dette arbeidet. Veilederen skal være et verktøy for ansatte ved UiB i planleggingsprosessen slik at alle vet hva man skal og bør være oppmerksom på underveis.

Utkastet til konferanseveileder sendes nå ut til alle enheter for ev. kommentarer.

Synspunkter på hva som ev. mangler, og om det er noe i veilederen som er feil. UiB vil gjerne ha tilbakemelding **innen 1. juni**. Les utkastet og finn me info [her](#).

### **Foredrag og diskusjon om publiserings og siterings-analyser**

Åpent møte om "Hvordan fremme god bruk av publiserings og siteringsanalyser og hindre at slikeanalyser får negative effekter på forskning og forskningsmiljø?"

Tid/sted: Fredag 13. mai kl. 13:15-15:00, Geofysisk institutt, Auditoriet østfløyen [Les mer](#)

### **ETIKK TIL FROKOST**

Redelighetsutvalget ved Universitetet i Bergen inviterer til morgensamling om etikk!

Tittel "Registerforskning – forenlig med forskningsetikken?"

Tid: Tirsdag 10. mai 2011, fra kl 0800-1000

Sted: Studentsenteret – "Egget" [Les mer](#)

### **Frokostseminar på Egget**

Frokostseminar med Jan Spurkeland: "Hvordan gjøre andre gode"

Tid/Sted: Egget, studentsenteret, fredag 20. mai kl 8:30 – 11:00

[Les mer](#)

### **1st Bergen meeting on PET chemistry and applications**

Arrangeres av Kjemisk institutt i Bergen 19 mai

Invitasjon og program finner du [her](#)

### **Summer school for PhD students and post docs, Spetses, Greece**

Spetses Summer School on Nuclear Receptor Signalling in Physiology and Disease

Spetses Hotel, Island of Spetses, Greece, August 28 – September 2, 2011

Application deadline is May 16, 2011. [More info](#)

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### Møteplass Marin 30. Mai

Møteplass Marin 30. Mai: Marin bioteknologi - erfaringer og muligheter i en milliardindustri  
Tid/sted: Mandag 30.mai 2011, kl.1500-1800/Grand Selskapslokaler i Bergen. Nedre Ole Bulls Plass  
[Mer info](#)

### Senter for kvinne- og kjønnsforskning (SKOK) inviterer til gjesteforelesning om: "Anthropogenic Ruin, Post-Human Feminist Polar Terrains"

Foreleser: **Elena Glasberg**, Whitman College – Writing Program, Princeton University, NJ, USA

Tid: fredag 13. mai kl. 14.15-16.00

Sted: Senter for kvinne- og kjønnsforskning (SKOK), Ida Bloms hus, Allégaten 34, seminarrommet, 3. etasje. [Les mer](#):

og

### "Affective Politics: States of Debility and Capacity"

Foreleser: Førsteamanuensis **Jasbir Puar**, Women's and Gender Studies and Geography, Rutgers University, New Jersey, USA

Tid: Torsdag 12. mai kl. 14.15-16.00

Sted: Senter for kvinne- og kjønnsforskning (SKOK), Ida Bloms hus, Allégaten 34, seminarrommet, 3. etasje [Les mer](#)

## Nye artikler

Kapfler; Stolen; Nilsen; Nylund; Andersen; Sævareid; Watnabø; Thompson; Utne-Palm; Pengalese; Kolding; Kongshavn; Birks; Skjærven; Finn; Lenhard,

Audorff V, **Kapfer J**, Beierkuhnlein C (2011) The role of hydrological and spatial factors for the vegetation of Central European springs. *Journal of Limnology* 70:9-22

### Abstract

Understanding the driving forces affecting species occurrences is a prerequisite for determining the indicator suitability of crenic plants. We analysed 18 environmental variables in a two-step approach, evaluating their ability to explain the species composition of 222 springs on five siliceous mountain ranges, in central Germany and north-west Czech Republic (49.9 degrees-50.8 degrees N, 10.6 degrees-12.8 degrees E). First, we identified the significant environmental variables in three subsets of spatial, hydrophysical and hydrochemical variables using a forward-selection procedure. We then performed a partial canonical correspondence analysis (pCCA) to estimate the influence of each subset alone, as well as in combinations. We also used a multiple response permutation procedure (MRPP) to compare the five regions with respect to the dissimilarity of their vegetation composition and environmental variables. Hydrochemical factors played a fundamental role in determining the plant community of the investigated springs. Spatial factors, in particular altitude, were correlated with the hydrochemical factors, but were less important. Hydrophysical factors played only a marginal role. More precisely, species occurrence was mainly driven by a gradient of nutrient availability, which in turn reflected the acidity status. This gradient was primarily represented by high Al, Cd, and Mn concentrations in acidic crenic waters, high Ca and Mg concentrations were encountered in circumneutral springs. By comparing the five regions we could show that there are spatial patterns in the vegetation of springs, which provide valuable ecological information on the water quality. We therefore suggest that biomonitoring approaches to vegetation are suitable for revealing the acidity status of springs and their forested catchments.

Glover KA, **Stolen AB**, Messmer A, Koop BF, Torrissen O, **Nilsen F** (2011) Population genetic structure of the parasitic copepod *Lepeophtheirus salmonis* throughout the Atlantic. *Marine Ecology-Progress Series* 427:161-172

**Abstract:** The parasitic copepod *Lepeophtheirus salmonis* is responsible for huge economic losses in the salmonid aquaculture industry, and has been linked with declines of wild salmonid populations. In order to elucidate population genetic structure throughout the Atlantic Ocean, 2495 lice representing 27 samples collected from 22 locations were analysed for 14 microsatellite loci. Significant overall genetic variation was observed (14 loci: global  $F_{ST} = 0.0057$ ,  $p < 0.0001$ ), although this decreased slightly when an outlier locus (*Lsa1STA3*), detected as a candidate for positive selection, was removed (13 neutral loci: global  $F_{ST} = 0.0022$ ,  $p < 0.0001$ ). A relationship between physical and genetic distance was observed ( $R^2 = 0.179$ ,  $p = 0.0013$ ), but only when data from *Lsa1STA3* was included. No overall genetic variation was observed among the 19 samples collected in Norway (Norwegian global  $F_{ST} < 0.0001$ ,  $p = 0.6$ ). None of the within-country (Canada, Ireland, Shetland and Faroe Islands) pairwise  $F_{ST}$  values were statistically significant when analysing the 13 neutral loci and following Bonferroni correction. Samples taken at 5 Norwegian farms did not exhibit significant genetic differences before and after medicated treatment. We conclude that *L. salmonis* displays weak but nevertheless statistically significant population genetic variation throughout the Atlantic. Analysis of temporal samples, potentially combined with larger numbers of markers giving greater genome coverage, will be required to fully elucidate the biological significance of the observed variation.

Jorgensen A, **Nylund A**, Nikolaisen V, Alexandersen S, Karlsbakk E (2011) Real-time PCR detection of *Parvicapsula pseudobranchicola* (Myxozoa: Myxosporia) in wild salmonids in Norway. *Journal of Fish Diseases* 34:365-371

**Abstract:** The myxozoan genus *Parvicapsula* contains 14 species infecting fish, some of which are known to cause severe disease in farmed and wild salmonids. *Parvicapsula pseudobranchicola* infections were first reported from seawater-reared Atlantic salmon, *Salmo salar*, in Norway in 2002 and have since then been an increasing problem. The present study describes a Taqman real-time PCR assay for specific detection of *P. pseudobranchicola*. The Taqman assay targets the 18S rRNA gene of *P. pseudobranchicola* and is able to detect as few as ten copies of the target sequence. Using the described assay, *P. pseudobranchicola* was detected in both farmed and wild salmonids, indicating that wild Atlantic salmon, sea trout, *Salmo trutta*, and Arctic char, *Salvelinus alpinus*, may be natural hosts of the parasite. *Parvicapsula pseudobranchicola* was found in samples from wild salmonids in the far south and the far north of Norway, displaying a wide geographic range of the parasite. Farmed salmonids showed *P. pseudobranchicola* infection levels many folds higher than that observed for wild sea trout, indicating that farmed Atlantic salmon are subjected to an elevated infection pressure compared with wild salmonids.

**Nylund S, Andersen L, Saevareid I, Plarre H, Watanabe K, Arnesen CE, Karlsbakk E, Nylund, A** (2011) Diseases of farmed Atlantic salmon *Salmo salar* associated with infections by the microsporidian *Paranucleospora theridion*. *Diseases of Aquatic Organisms* 94:41-57

**Abstract:** The microsporidian *Paranucleospora theridion* was discovered in Atlantic salmon *Salmo salar* suffering from proliferative gill disease in a marine farm in western Norway in 2008. The parasite develops in cells of the reticuloendothelial system, cells important for normal immune function. The aim of this study was to see if *P. theridion* could play a part in some of the diseases with unclear causes in salmon production in Norway, i.e. proliferative gill disease (PGI), pancreas disease (PD), heart and skeletal muscle inflammation (HSMI) and cardiomyopathy syndrome (CMS). *P. theridion* was present in all areas with salmon farming in Norway, but high prevalence and densities of the parasite in salmon and salmon lice were only seen in southern Norway. This region is also the main area for PGI and PD in Norway. Quantification of pathogens associated with PGI, PD, HSMI and CMS diagnoses showed that *P. theridion* levels are high in southern Norway, and may therefore play a role in susceptibility and disease development. However, among the different diagnoses, fish with PGI are particularly heavily infected with *P. theridion*. Therefore, *P. theridion* appears as a possible primary agent in cases with high mortality in connection with PGI in western Norway.

Sagane Y, Hosp J, Zech K, **Thompson EM** (2011) Cytoskeleton-mediated templating of complex cellulose-scaffolded extracellular structure and its association with oikosins in the urochordate *Oikopleura*. *Cellular and Molecular Life Sciences* 68:1611-1622

**Abstract:** Oriented cellulose deposition is critical to plant patterning and models suggest microtubules constrain cellulose synthase movements through the plasma membrane. Though widespread in plants, urochordates are the only animals that synthesize cellulose. We characterized the distinctive cellulose microfibril scaffold of the larvacean house and its interaction with house structural proteins (oikosins). Targeted disruption of cytoskeletal elements, secretory pathways, and plasma membrane organization, suggested a working model for templating extracellular cellulose microfibrils from animal cells that shows both convergence and differences to plant models. Specialized cortical F-actin arrays template microfibril orientation and glycosylphosphatidylinositol-anchored proteins in lipid rafts may act as scaffolding proteins in microfibril elongation. Microtubules deliver and maintain cellulose synthase complexes to specific cell membrane sites rather than orienting their movement through the membrane. Oikosins are incorporated into house compartments directly above their corresponding cellular field of expression and interact with the cellulose scaffold to a variable extent.

van der Sluijs I, Gray SM, Amorim MCP, Barber I, Candolin U, Hendry AP, Krahe R, Maan ME, **Utne-Palm AC**, Wagner HJ, Wong BBM (2011) Communication in troubled waters: responses of fish communication systems to changing environments. *Evolutionary Ecology* 25:623-640

**Abstract:** Fish populations are increasingly being subjected to anthropogenic changes to their sensory environments. The impact of these changes on inter- and intra-specific communication, and its evolutionary consequences, has only recently started to receive research attention. A disruption of the sensory environment is likely to impact communication, especially with respect to reproductive interactions that help to maintain species boundaries. Aquatic ecosystems around the world are being threatened by a variety of environmental stressors, causing dramatic losses of biodiversity and bringing urgency to the need to understand how fish respond to rapid environmental changes. Here, we discuss current research on different communication systems (visual, chemical, acoustic, electric) and explore the state of our knowledge of how complex systems respond to environmental stressors using fish as a model. By far the bulk of our understanding comes from research on visual communication in the context of mate selection and competition for mates, while work on other communication systems is accumulating. In particular, it is increasingly acknowledged that environmental effects on one mode of communication may trigger compensation through other modalities. The strength and direction of selection on communication traits may vary if such compensation occurs. However, we find a dearth of studies that have taken a multimodal approach to investigating the evolutionary impact of environmental change on communication in fish. Future research should focus on the interaction between different modes of communication, especially under changing environmental conditions. Further, we see an urgent need for a better understanding of the evolutionary consequences of changes in communication systems on fish diversity.

**Sam Penglase**, Kristin Hamre, John W. Sweetman and Andreas Nordgreen. A new method to increase and maintain the concentration of selenium in rotifers (*Brachionus* spp.). *Aquaculture* 315 (2011), 144-153.

### **Abstract**

Rotifers are used as the first feeding diet for the larvae of many commercially produced marine fish species. However, the nutritional requirements of marine fish larvae appear to be better fulfilled by their wild feed, copepods. Consequently, rotifers are fed diets that alter their body composition to better imitate copepod composition and this results in greater success when rearing rotifer fed marine fish larvae. Despite this, copepod fed fish larvae still have higher growth rates and survival than rotifer fed larvae. This may occur because of the less investigated mineral differences that exist between rotifers and copepods. The concentration of selenium (Se) in rotifers *Brachionus* sp. (0.08–0.09 mg Se kg<sup>-1</sup> dry weight) can be over 30 fold lower than the concentration found in copepods (3–5 mg Se kg<sup>-1</sup> dry weight). In this study, the enrichment and retention of Se in rotifers fed Se enriched yeast (Se-yeast) were investigated. Rotifer Se concentration increased linearly with increasing levels of Se-yeast, with rotifers reaching a maximum of 138 mg Se kg<sup>-1</sup> dry weight. The use of Se-yeast was highly effective, with only 1% of the batch culture or short term enrichment diet needed to be replaced with Se-yeast to achieve copepod Se levels. At this feeding level there were no negative effects on rotifer egg ratio or population growth. Uptake of Se from Se-yeast was over 40 fold higher than obtained from using sodium selenite in short term enrichments (3 h). Se-yeast enriched rotifers had a

high retention (100–85%) of Se for up to 10 h storage in clear water at cold (10 °C) or warm (20 °C) temperatures, while storage in green water (with algae) resulted in a slightly lower Se retention (65%) in a similar time period (8 h). Overall, rotifers enrichment with Se-yeast resulted in reproducible concentrations of Se that were then retained for extended periods of time. This will allow Se-yeast enriched rotifers to be used as a Se delivery method for fish larvae nutritional requirement or toxicological studies.

van Zwieten PAM, Banda M, **Kolding J** (2011) Selecting indicators to assess the fisheries of Lake Malawi and Lake Malombe: Knowledge base and evaluative capacity. *Journal of Great Lakes Research* 37:26-44

**Abstract:** The provision of management information on the fisheries of Lakes Malawi and Malombe has been characterised by top-down controlled single species steady-state assessment techniques originating from single gear industrial fisheries but applied to an open access highly diverse and adaptive small-scale multispecies and multi-gear fishery. The result has largely been an unhappy marriage with uncertainties blamed more on the data than the process, although the data collection generally is detailed and comprehensive on catch and effort parameters. An extensive literature review of primary and grey literature on ecosystem drivers, exploitation pressures, and fish population and community states shows that Malawi has the necessary knowledge base for expanding their assessment into multi-causal and exploratory indicator-based methods that can assist in better understanding and more disciplined use of existing data and monitoring systems. Selection and ranking of a suite of indicators focusing on the major fisheries in the Southeast arm of Lake Malawi and Lake Malombe were done by a group of Malawian fisheries researchers and management advisers, thereby testing a framework of scoring criteria assessing an indicator's acceptability, observability, and relatedness to management. Indicators that are close to raw observational data and that require limited permutations and few assumptions appear to be preferable in the Malawian context. CPUE-based assessments can improve the utility of data and information in communicating developments and processes and evaluate fisheries management policies. (C) 2010 International Association for Great Lakes Research. Published by Elsevier B.V. All rights reserved.

Velle G, **Kongshavn K, Birks HJB** (2011) Minimizing the edge-effect in environmental reconstructions by trimming the calibration set: Chironomid-inferred temperatures from Spitsbergen. *Holocene* 21:417-430

**Abstract:** A core from Lake Skardtjorna on western Spitsbergen was analysed for subfossil chironomids with the aim of inferring past temperatures. The core spans the last 1760 years and has a low concentration and low diversity of chironomids. Three taxa dominate the record: *Oliveridia tricornis*, *Micropsectra radialis*-type, and *M. insignilobus*-type, the latter not previously recorded on Svalbard. Compared with the full Norwegian modern climate-chironomid calibration data set, Skardtjorna is at the coldest end of the modern temperature gradient. In an attempt to decrease potential bias caused by the numerical edge-effect and to improve the taxon response functions, the training set was trimmed by excluding lakes dissimilar to the study site. Two trimming approaches are tested. In the first, lakes at the warm end of the gradient are excluded. In the second, the calibration data-set lakes are partitioned by TWINSPAN on the basis of their modern chironomid assemblages, and lakes most dissimilar to Skardtjorna are excluded. According to the training-set performance diagnostics, a WA-PLS inference model excluding lakes > 9 degrees C has the most promising results (component 1, R<sup>2</sup> = 0.85, maximum bias = 0.58 degrees C, RMSEP = 0.73 degrees C). The performance diagnostics based on the trimmed inference model out-performs the performance diagnostics from the full model, and the reconstructed temperatures indicate different trends. According to the < 9 degrees C inference model, the long-term temperature trend has been decreasing, with cold periods 1630-1450, 1150-1050, and around 250 cal. yr BP. Warm periods occurred between 1760 and 1650, 1420 and 1180, and 1000 and 830 cal. yr BP. Temperatures have been increasing during the last 250 years

**Kaja H. Skjærven**, Pål A. Olsvik, **Roderick Nigel Finn**, Elisabeth Holen Kristin Hamre Ontogenetic expression of maternal and zygotic genes in Atlantic cod embryos under ambient and thermally stressed conditions *Comparative Biochemistry and Physiology, Part A* 159 (2011) 196–205

### Abstract

The embryonic stages of Atlantic cod (*Gadus morhua*) are especially sensitive to incubation temperature. The purpose of the present study was to follow the ontogenetic expression of selected genes of maternal (*pou2* and *nanog*) and zygotic origin (*hsp70*, *hsp90α* and *stip1*), in Atlantic cod embryos under ambient and thermally stressed conditions. The study also investigated how reference genes can be applied to studies on embryonic development, when maternal genes are degraded and the zygotic transcription stabilizes. Three batches of eggs were reared and gene expression profiles from the reference and target genes were determined. The embryos were reared at ambient 6 °C, and 10 °C for continuous long-term and acute short-term heat exposure. Both *pou2* and *nanog* showed reduced expression whereas the zygotic and reference genes showed increased expression until stabilizing at gastrulation,

Erik Engelen, Umut Akinci, Jan Christian Bryne, Jun Hou, Cristina Gontan, Maaike Moen, Dorota Szumska, Christel Kockx, Wilfred van IJcken, Dick H W Dekkers, Jeroen Demmers, Erik-Jan Rijkers, Shoumo Bhattacharya, Sjaak Philipsen, Larysa H Pevny, Frank G Grosveld, Robbert J Rottier, **Boris Lenhard** & Raymond A Poot. Sox2 cooperates with Chd7 to regulate genes that are mutated in human syndromes. *Nature Genetics*, doi:10.1038/ng.825

### Abstract

The HMG-box transcription factor Sox2 plays a role throughout neurogenesis<sup>1</sup> and also acts at other stages of development<sup>2</sup>, as illustrated by the multiple organs affected in the anophthalmia syndrome caused by *SOX2* mutations<sup>3–5</sup>. Here we combined proteomic and genomic approaches to characterize gene regulation by Sox2 in neural stem cells. Chd7, a chromatin remodeling ATPase associated with CHARGE syndrome<sup>6,7</sup>, was identified as a Sox2 transcriptional cofactor. Sox2 and Chd7 physically interact, have overlapping genome-wide binding sites and regulate a set of common target genes including *Jag1*, *Gli3* and *Mycn*, genes mutated in Alagille, Pallister-Hall and Feingold syndromes, which show malformations also associated with *SOX2* anophthalmia syndrome or CHARGE syndrome<sup>8–10</sup>. Regulation of disease-associated genes by a Sox2-Chd7 complex provides a plausible explanation for several malformations associated with *SOX2* anophthalmia syndrome or CHARGE syndrome. Indeed, we found that *Chd7*-haploinsufficient embryos showed severely reduced expression of *Jag1* in the developing inner ear. [Full text](#)