UiB Institutt for biologi

BIO-INFO 26/2008, 1. august 2008 BIO: sakslister og møtereferater BIO-INFO arkiv

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Denne ukas viktigste

Viktige tidsfrister

Mer info om følgende utlysninger og mange flere (inkl. løpende, dvs. uten frister) finner du **her**
Husk å sende søknadsutkastet til post@bio.uib.no 1 uke i forveien (gjelder ikke mindre bevilgninger som legater og fonds)

Postadresse:	Besøksadresse:	Telefon:	E-post:	Jarl Giske:
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1. aug	Nordic Marine Academy	26. aug	Frist for toktsøknader for 2009
12. aug	ERA-NET / ERA-NET PLUS Call 2008	15. sept	Helse Vests forskningsmidler for 2009
19. aug	FP7 People:		
	Intra-European Fellowships (IEF)		
	International Incoming Fellowships (IIF)		
	International Outgoing Fellowships (IOF)		

** for more information check BIO-web for more deadlines, further details and on-going opportunities as well as UiB's Department of Research Management

Sommernyheter fra BIO

Lykke til, fakultetsdirektør!

UiB har brukt våren og sommeren til å finne ny fakultetsdirektør ved vårt fakultet. Vår administrasjonssjef **Bjørn Åge Tømmerås** kommer ganske sikkert til å etterfølge Kjell Sælen som fakultetsdirektør i løpet av høsten.

Kort sagt kom Bjørn Åge til Bergen i 2004 på grunn av kjærligheten, ettersom konemoren ble lokket fra Trondheim til SFF-en Senter for middelalderstudier. Siden han ikke er oppvokst i UiB-systemet, har han både sett sterke og svake sider ved vår organisasjon med øynene til en innflytter. Det kan jo gi litt langsom start i en travel jobb, men gir også verdifulle muligheter til å spørre hvorfor vi gjør sånn og ikke slik om mange ting. Og denne undringen har ikke bare vært rettet mot BIO; både fakultetsnivået og UiBs sentraladministrasjon har møtt Bjørn Åge som en som spør.

Nå blir det vår tur til å spørre ham.

Ny førsteamanuensis-stilling som faglig rådgiver for Lyngheisenteret

Herved gratuleres **Peter Emil Kaland** med at UiB har opprettet en vitenskapelig stilling rettet inn mot Lyngheisenteret. Mer om dette lenger nede i dette menighetsbladet. Her vil jeg bare fokusere på Peter Emil. Han har forsket på og formidlet fra lyngheiene i 30 år, og vunnet de største priser. Han kan nok ikke forklare helt hva "ISI Impact factor" er, men han har hatt en voldsom impact. Takket være ham mottok Lyngheisenteret **UNESCOs pris for kulturlandskap** i 2001 og **EUs kulturarvpris** i 2004. Etter mye strev og varige konkurs-lignende tilstander fikk han Lyngheisenteret inn på Statsbudsjettet fra og med 2007, som en enhet i Museumssenteret i Salhus (sammen med Norsk Trikotasjemuseum, Bevaringstjenestene, Havråtunet og Osterøy museum). Derfor tar UiB sentralt hatten av for Peter Emil og sørger for at han ikke skal tvile på at fagfeltet skal fortsette å utvikle seg, i alle fall i en generasjon til.

BIOs budsjettforslag for neste år

Nytt av i år var at budsjettforslaget skulle sendes til fakultetet innen 1. juli i stedet for omtrent 20. august. Det har gitt seg utslag i en roligere sommer for instituttledelsen. (Og hvilken deilig sommer!) Altså et framskritt.

Budsjettarbeidet begynte med at jeg hadde møte med hver forskningsgruppeleder i april og mai. Et tidlig utkast til hovedprioriteringer ble så diskutert av ledergruppa i begynnelsen av juni, og deretter bearbeidet videre til instituttrådsmøtet midt i juni. Selve budsjettskrivet ble laget etter instituttrådsmøtet, og oversendt fakultetet et par dager inn i juli. Der har det fått hvile i sommer, men i august skal fakultetet sy sammen 8 instituttønskelister til et fakultetsbudsjettforslag som etter behandling i fakultetsstyret skal presenteres for universitetsledelsen. Til slutt, etter statsbudsjett-forslaget fra flertallsregjeringen presenteres i oktober og budsjett for UiB vedtas i november, ender prosessen med at fakultetsstyret i desember vedtar tildeling til hvert institutt for 2009. Den tildelingen kommer nok dessverre ikke helt til å ligne på BIOs budsjettforslag. Vårt viktigste budskapet til høyere makter i år er at vi trenger utstyr til nybyggene. Dersom vi får 80 millioner kroner blir alle våre hittil kjente ønsker innfridd, men da vil vi nok finne på nye drømmer. Det blir imidlertid neppe nødvendig, for det er rimelig utenkelig at UiB kan finne fram så mye penger til oss. Alle andre saker er av det mer ordinære slaget, men viktige nok! Du kan godt ta deg tid til å lese de første sidene, i alle fall, samt det som gjelder din del av instituttet. Du finner skrivet her.

Hilsen Jarl Giske

Søknad om tokt 2009 - frist 26. august

Merk følgende interne BIO-regel i tillegg til alle andre regler for toktsøknader: Dersom det på toktet er tenkt brukt teknisk personale fra BIO, skal dette redegjøres for spesielt i en epost til instituttleder innen samme frist 26.8.

Merk også at fartøyene har begrenset kapasitet på sitt eget tekniske personale. BIO kan ikke planlegge tokt som baserer seg på tilgang til fartøyets teknikere mer enn en begrenset tid på døgnet, slik at disse også får gjennomført sin arbeids- og hviletid.Om du har tenkt å bruke fartøyteknikere mye, så kontakt rederiet til HI for en avklaring i god tid før toktet.

Til slutt minner jeg om toktlederkursene som HI arrangerer, og som både erfarne og ferske toktledere bør ta. Melding kommer så snart datoene for disse er kjent.

Søknadsprosedyre Søknadene for tokt i 2009 skal sendes på web-basert søknadsskjema som finnes på: http://www2.imr.no/tokt/toktsoknad09/

```
Brukernavn: tokt2009
Passord:    utmothavet
```

Skjemaet er enklere og mer oversiktelig enn tidligere versjoner. Nederst på skjemaet får du tilbud om å lage en pdf fil eller legge søknaden inn i databasen. Vennligst IKKE legg søknaden inn i databasen før du er sikker på at du har en endelig versjon. Rubrikken 'Administrativ Info' kan brukes til beskrivelse av finansieringskilder, eksterne føringer, samarbeidspartnere, o.l.

Toktnavn For undervisningstokt, vennligst oppgi kursnummer i toktnavn (f.eks. "GEOF332 Undervisningstokt"). Oppgi gjerne prosjekt akronym i toktnavn (f.eks. "BIODEEP- Dype hydrotermale felt 74N").

Aktuelle fartøy UiB kan søke om tokt med alle HI sine fartøy, inkludert Jan Mayen.

2009 – spesielle føringer Prosjektet EU-CARBOOCEAN (v/Truls Johannesen) gikk med på å utsette sitt tokt fra 2008 til 2009. Dette betyr at FFU har godkjent at 30 døgn på G. O. Sars overføres til 2009. I tillegg vil prosjektet søke om ytterligere 10 døgn på 2009 kvoten, og det ventes at HI vil bidra med 20 døgn på sin kvote (Havklima og plankton i Norskehavet + snitt). Dermed blir G. O. Sars sannsynligvis opptatt med CARBOOCEAN hele juni og juli 2009.

Ny førsteamanuensis-stilling i økologi og bevaringsbiologi knyttet til Lyngheisenteret

BIO har fått en ny stilling i løpet av sommeren. Halvparten av midlene kommer fra UiB sentralt, og halvparten av resten får vi fra MN-fakultetet. Resten betaler vi selv. Årsaken til gaven er at Universitetsstyret på denne måten vil styrke det faglige grunnlaget for Lyngheisenteret. I dette ligger det nok først og fremst en veldig respekt fra UiBs ledelse for den lange og sterke innsatsen professor **Peter Emil Kaland** har gjort både for å etablere Lyngheisenteret og for å initiere, lede og gjennomføre den forskningen som har foregått på Lygra. BIO gratulerer Peter Emil med at arveføLgen nå synes være sikret!

Førsteamanuensen skal være faglig rådgiver for senteret. BIO tar sikte på å få stillinga lyst ut i løpet av september. I stillingsomtalen vil det stå noe som likner på dette:

> *Denne stillinga skal styrke BIO sin forskingsprofil innan global økologi og bevaringsbiologi. Spesielt ønskjer vi fokus på status, trendar og prosessar i dynamiske økosystem, samt effektar på populasjonsdynamikk og biodiversitet. Den som blir tilsett i stillinga må halda eit høgt internasjonalt nivå innanfor sitt primære forskingsfelt, men må også vere interessert i å bruke fagleg ekspertise til å bidra til utvikling av ein kunnskapsbasert naturforvaltning. Eit breitt teoretisk og metodisk tilfang vil vere ein føremon. Den som får stillinga må vere interessert i å bruke kystlyngheiene som modellsystem i forskinga si. Vi ser gjerne at systemet blir brukt komparativt og blir sett i ein global samanheng.*

Vi tar sikte på å fremme saken for fakultetsstyret i september. Den lykkelige vinner kan da kanskje være på plass i januar.

BIO trenger ny administrasjonssjef, studiekonsulent og økonomikonsulent

Det er fire år og en sommer siden **Bjørn Åge** kom til BIO, og nå skifter han etter alle solemerker snart side av bordet og blir Kjell Sælens etterfølger som fakultetsdirektør for matnat. Lykke til, Bjørn Åge (og fakultetet)! Bjørn Åge kalte seg imidlertid "nybegynner" i de tre første årene ved BIO, og har da tilsvarende lang oppsigelsestid. Ettersom Kjell Sælen allerede er pensjonert, kan det være at

universitetsdirektør og dekanus ikke tar seg tid til å tenke gjennom dette argumentet. Vi trenger i alle fall en ny administrasjonssjef. Utlysning kommer så fort vi klarer det. I mellomtida får vi utnytte den vi fremdeles har..

Vi trenger også en ny studiekonsulent og en ny økonomikonsulent. Dette kommer av at **Anne Birgit Ruud Hage** også skifter jobb i løpet av høsten mens **Tore Berget** allerede har gjort det.

Senter for geobiologi fant varmekilde på 2400 meters dyp i Norskehavet

For noen uker siden ble det kjent at verdens nordligste varmekilde var funnet på 2400 meters dyp i Norskehavet. Det resulterte i en rekke tv- og avisoppslag for Rolf-Birger Pedersen ved Senter for geobiologi:

NRK Dagsrevyen (tv): http://www1.nrk.no/nett-tv/distrikt/NDHO/verdi/65515
NRK nett - http://www.nrk.no/nyheter/distrikt/hordaland/1.6143803
NRK Hordaland billedgalleri: http://www3.nrk.no/nyheter/distrikt/hordaland/1.6143946
Bergens Tidende - http://www.bt.no/forbruker/vitenskap/article599790.ece
BA - http://www.ba.no/nyheter/article3672786.ece
TV2 - http://tv2nyhetene.no/innenriks/article2076720.ece
Fiskaren - http://www.fiskeribladetfiskaren.no/default.asp?side=101&lesmer=8346
Sonen Bergen - http://bergen.origo.no/-/bulletin/show/99593_unikt-funn-i-norskehavet
Nationen - http://www.nationen.no/distrikt/article3674162.ece

Kjersti Sjøtun: Uendra for tang og tare i Hardangerfjorden

Ei undersøking av tang- og tarebestanden i Hardangerfjorden i juni viser at lite har endra seg sidan 1950-talet då tilsvarande undersøkingar vart gjort. Les meir på Kyst.no

Er dette brunsneglens fiende?

Den "nye" rødsneglen kan muligens jage bort den enda mer plagsomme brunsneglen, sier stipendiat **Bjørn Arild Hatteland**. Les mer i bt.no

Are Nylund: Sjuk norsk rogn til Chile?

Norsk laks er opphavet til sjuk laks i Chile, hevdar professor i fiskehelse. Les meir frå NRK Møre og Romsdal

Siste nytt fra verden rundt oss

Ledige stillinger for biologer

Sjekk oversikten på jobbnor!

Frist	Stilling
01.08	Postdoktor ved Institiutt for biomedisin
01.08	Postdoktor ved Institutt for biomedisin
11.08	Universitetsstipend i vannforskning
15.08	Stipendiat ved Molekylærbiologisk institutt
15.08	Stipendiat ved Molekylærbiologisk institutt
15.08	Sars Centre: Stipendiat (PhD-kandidat) innan utvikling av nervesystem i sjøanemonar (cnidaria)
26.08	**BIO: studiekonsulent**
31.08	Gades institutt: Stipendiat i virologi/immunologi ved Influensasenteret
05.09	Science and Technology Fellowship Programme in China http://www.euchinastf.eu
sept	**BIO/EvoFish: stipendiat i evolusjonær biologi**
14.09	Ass. Professor of Aquatic Animal Health, Dept of Med. & Epid., Sch. of Vet. Med., UC Davis
15.09	UiO: Førsteamanuensis/professor i marinbiologi
26.09	4 phd-stipendier i det marine klima og økosystem omkring Færøerne
26.09	IFREMER/HI/**(BIO)**: Postdoc: Modelling blue mussel bioenergetics in aquaculture
okt	**BIO: førsteamanuensis i botanisk økologi**
okt	**BIO: førsteamanuensis i mikrobiell økologi**

Forskning: utlysninger, nye satsinger og prosjekter

Bilat – Nytt stimuleringstiltak for økt bilateralt forskningssamarbeid

Forskningsrådet ønsker å styrke internasjonalt forskningssamarbeid. Fra og med 2008 kan alle som mottar midler fra Forskningsrådet innenfor fri prosjektstøtte og nærmere spesifiserte grunnforskningsprogrammer og helseforskningsprogrammer, søke om tilleggsfinansiering til utenlandsopphold for stipendiater, gjesteforskerstipend, workshops eller andre arrangementer og reise og opphold for prosjektledere. Nærmere opplysninger er angitt i utlysningen på våre nettsider her.

Disse stimuleringstiltakene er knyttet til de prioriterte samarbeidslandene USA, Canada, Kina, Japan, India, Russland og Sør-Afrika. For det europeiske forskningssamarbeidet eksisterer det andre ordninger.

Hilsen Ian Gjertz, Seniorrådgiver, Norges forskningsråd, Avd. Biologi og biomedisin,
Tlf 22037468, e-post: ig@forskningsradet.no

Helse Vest: utlysning av forskningsmidler 2009

Fristen for å søke Helse Vests forskningsmidler for 2009 er 15. september, og det elektroniske søknadsskjemaet er nå tilgjengelig. På bakgrunn av brev fra Helse- og omsorgsdepartementet er det foretatt følgende endring i forhold til hvem som kan søke Helse Vests forskningsmidler, jf.

Formål og kriterier:

- Søker må være ansatt ved, eller ha formell tilknytning til et helseforetak i regionen eller en helseinstitusjon som har avtale med Helse Vest.
- Ved søknader om doktorgradsstipend må enten stipendiaten, hovedveileder eller prosjektleder være ansatt ved, eller ha formell tilknytning til et helseforetak i regionen eller ved en helseinstitusjon som har avtale med Helse Vest.

Les mer ..

Ny medarbeider

Stipendiat Jutta Kapfer just started her 3 yr Ph.D. in June 2008 at the Ecological and Environmental Change Research Group (EECRG). She has a Diploma degree in Geoecology (University of Bayreuth, Germany), where she focused on biogeographical research questions (biomonitoring, bioindication, vegetation dynamics). Her diploma thesis based on the comparison of different reactions of bryophytes and tracheophytes to short-term changes in environment. The results from that work will soon be published. After earning her degree she was collaborating in the German research project "Vegetation dynamics of forest springs" at the Department of Biogeography, University of Bayreuth. Her Ph.D. project is embedded in the EECRG-project "ReSample – Driving forces in vegetation dynamics and their consequences for ecosystem services". Based on old data (decadal periods) on community composition in different regions of Scandinavia, the focus of her work lies on the determination of the main human-related drivers of vegetation changes and how these changes may affect important ecosystem services. Supervisors for her Ph.D.-project are John-Arvid Grytnes (Department of Biology) and John Birks (Department of Biology and Bjerknes Centre for Climate Research).

Nye artikler

Har du en artikkel, kapittel eller bok som ikke har stått her?
Du kan sende bibliografi og abstract (helst i Word-format) til Jarl så snart du har sidetall.

Christofer Troedsson & Paolo Simonelli: metode for å finne parasittiske protister hos dyr

Troedsson Christofer, Richard F. Lee, Vivica Stokes, Tina L. Walters, Paolo Simonelli, and Marc E. Frischer 2008. Development of a Denaturing High-Performance Liquid Chromatography Method for Detection of Protist Parasites of Metazoans. Appl. Environ. Microbiol. 74: 4336-4345.

Abstract: Increasingly, diseases of marine organisms are recognized as significant biotic factors affecting description of novel parasites most often rely on morphological descriptions made by highly trained specialists. Here, we describe a new approach for parasite discovery, utilizing denaturing high-performance liquid chromatography (DHPLC) reverse-phase ion-paring technology. Systematic investigations of major DHPLC variables, including temperature, gradient conditions, and target amplicon characteristics were conducted to develop a mechanistic understanding of DNA fragment separation by DHPLC. As a model system, 18S rRNA genes from the blue crab (*Callinectes sapidus*) and a parasitic dinoflagellate *Hematodinium* sp. were used. Binding of 18S rRNA gene PCR amplicons to the DNA separation column in the presence of triethylammonium acetate (TEAA) was inversely correlated with temperature and could be predicted based on the estimated DNA helicity of the PCR amplicon. Amplicons of up to 498 bp were resolved as single chromatographic peaks if they had high (>95%) DNA helicity. Amplicons that differed by as few as 2 bp could be resolved. Separation of 18S rRNA gene PCR amplicons was optimized by simultaneous manipulation of both temperature and solvent gradients. The optimal conditions included targeting regions of high DNA helicity (>95%), temperatures in the range of 57 to 63°C, and a linear acetonitrile gradient from 13.75 to 17.5% acetonitrile in 0.1 M TEAA (55 to 70% buffer B) over a 9-min period. Under these conditions, amplicons from a variety of parasites and their hosts can be separated and detected by DHPLC.

Christofer Troedsson: metode for å finne parasittiske krepsdyr hos krabber

Troedsson Christofer, Richard F. Lee, Tina Walters, Vivica Stokes, Karrie Brinkley, Verena Naegele and Marc E. Frischer 2008. Detection and Discovery of Crustacean Parasites in Blue Crabs (*Callinectes sapidus*) by Using 18S rRNA Gene-Targeted Denaturing High-Performance Liquid Chromatography. Appl. Environ. Microbiol. 74: 4346-4353.

Abstract: Recently, we described a novel denaturing high-performance liquid chromatography (DHPLC) approach useful for initial detection and identification of crustacean parasites. Because this approach utilizes general primers targeted to conserved regions of the 18S rRNA gene, a priori genetic sequence information on eukaryotic parasites is not required. This distinction provides a significant advantage over specifically targeted PCR assays that do not allow for the detection of unknown or unsuspected parasites. However, initial field evaluations of the DHPLC assay suggested that because of PCR-biased amplification of dominant host genes it was not possible to detect relatively rare parasite genes in infected crab tissue. Here, we describe the use of a peptide nucleic acid (PNA) PCR hybridization blocking probe in association with DHPLC (PNA-PCR DHPLC) to overcome inherent PCR bias associated with amplification of rare target genes by use of generic primers. This approach was utilized to detect infection of blue crabs (*Callinectes sapidus*) by the parasitic dinoflagellate *Hematodinium* sp. Evaluation of 76 crabs caught in Wassaw Sound, GA, indicated a 97% correspondence between detection of the parasite by use of a specific PCR diagnostic assay and that by use of PNA-PCR DHPLC. During these studies, we discovered one crab with an association with a previously undescribed protist symbiont. Phylogenetic analysis of the amplified symbiont 18S rRNA gene indicated that it is most closely related to the free-living kinetoplastid parasite *Procryptobia sorokini*. To our knowledge, this is the first report of this parasite group in a decapod crab and of this organism exhibiting a presumably parasitic life history.

Sigurd Strefansson: evolusjon av kontrollgener tilknyttet hypofysen hos vertebrater

Angotzi, Anna R, Kari Merete Ersland, Sutada Mungpakdee, Sigurd Stefansson, Daniel Chourrout 2008. Independent and dynamic reallocation of pitx gene expression during vertebrate evolution, with emphasis on fish pituitary development. Gene 417: 19–26

Abstract: Several transcription regulators play key roles during pituitary morphogenesis. Well known intrinsic signals of the adenohypophysis such as the K50 paired-like homeodomain proteins regulate commitment, proliferation, differential specification and maintenance of adenohypophyseal cells. We have cloned and successively characterized the mRNA localization of three pitx gene-pairs and three of their splice variants in salmon, pitx1α, pitx1β; pitx2α, pitx2β; pitx3α, pitx3β; pitx1αsh, pitx1βsh and pitx2αA. The high level of conservation between the pitx paralog-pairs indicates that they likely arose from lineage-specific genome duplication. We also report the isolation of a pitx1 gene in zebrafish. Comparative ISH studies of zebrafish, salmon and mouse pitx genes indicate both conservation and

divergence of spatial expression domains in vertebrates. Significant differences were observed between the expressions of pitx orthologs during pituitary development.We suggest that the ancestral pituitary expression at early and late events of morphogenesis is preserved in different species through complementary shuffling of expression between the distinct pitx members of the family. Moreover, ISH analysis of the pitx salmon repertoire shows rapid evolution in this lineage, differences in spatio-temporal expression are observed between gene duplicates.

Christoffer Schander: gensekvenser må inneholde artsmerkelapp

Pleijel F., U. Jondelius, E. Norlinder, A. Nygren, B. Oxelman, C. Schander, P. Sundberg, M. Thollesson 2008. Phylogenies without roots? A plea for the use of vouchers in molecular phylogenetic studies. Molecular Phylogenetics and Evolution 48: 369–371

Molecular data have revolutionized systematics and phylogenetic research, and are now routinely used in systematic laboratories. Most journals publishing molecular phylogenies require that the sequences be deposited in accessible repositories, such as GenBank. However, as more molecular data become available, there is a growing concern about the taxonomic origin of these data. Although some taxa appear to be well delineated and easy enough to recognize, others still can only be identified by a handful of specialists. Today there is a large number of sequences deposited at GenBank that are incorrectly labeled and, unless remedied, these will continuously be associated with the wrong taxa. Vouchers constitute an essential link between data and taxa, and provide a means to verify the taxonomic identity of the specimens sequenced. However, only a minority of journals require that vouchers connected to the genetic information be deposited in museums or other institutions. Furthermore, at GenBank there is currently no dedicated field for specification of vouchers. Without vouchers, a study cannot be confirmed or disconfirmed, and users have to rely on the authority of the person making the identification. This is a scientifically unacceptable procedure, and we here plead for journals and organizations hosting public data repositories to consistently require vouchers deposited in publicly accessible collections. We also suggest a terminology for different kinds of vouchers, reflecting their value in taxonomic identification of the study specimen.

Glenn Bristow: igle-larver i fisk i akvakultur i Vietnam

Vo, Dung The, Darwin Murrell, Anders Dalsgaard, Glenn Bristow, Dung Huu Nguyen, Thanh Ngoc Bui and Dung Thi Vo 2008. Prevalence of zoonotic metacercariae in two species of grouper, *Epinephelus coioides* and *Epinephelus bleekeri*, and flathead mullet, *Mugil cephalus,* in Vietnam. Korean J Parasitol. 46: 77-82. DOI: 10.3347/kjp.2008.46.2.77

Abstract: Fishborne zoonotic metacercariae have not been reported from brackish water and marine fish from Vietnam waters although these parasites are common in the country's freshwater fish. Both wild-caught and cultured grouper (*Epinephelus coioides* and *Epinephelus bleekeri*), and mullet (*Mugil cephalus*) from brackish and marine waters located in Khanh Hoa province in central coastal Vietnam were examined, and found positive for zoonotic trematode metacercariae. From grouper, *Heterophyopsis continua* and *Procerovum varium* were recovered. The prevalence of *H. continua* ranged from 2.0 to 6.0 % and that for *P. varium* ranged from 11.6 to 15.8 %. Mullet were infected with *Pygidiopsis summa* and *H. continua*; both of these species are new records for Vietnam. The prevalence of *P. summa* in mullet was generally high, ranging from 17.6 to 75.5 %, and was significantly higher than the prevalence of *H. continua* (2.5 to 32.4 %). There were no significant differences in the prevalence of metacercariae between grouper from natural or cultured habitats, indicating that the highest risk of infection occurs in the wild-caught state prior to their placement in culture. Further, there was no difference in metacercarial prevalence between the 2 species of grouper. Infected wild-caught seed were only observed from January to October. Monthly variation in prevalence suggests seasonal variation in mullet infections occurs in this region with the highest transmission taking place from October to December. Basic investigations on the ecology and epidemiology of these intestinal flukes need to be carried out to determine their significance as a public health problem and the aspects of their biology that may be vulnerable to control interventions.

Jeppe Kolding, Lise Haug, & Sigurd Stefansson: oksygenbegrenset vekst og reproduksjon hos nil-tilapia

Kolding Jeppe, Lise Haug, and Sigurd Stefansson 2008. Effect of ambient oxygen on growth and reproduction in Nile tilapia (*Oreochromis niloticus*). Can. J. Fish. Aquat. Sci. 65: 1413-1424.

Abstract: Growth, size at maturity, gonadosomatic index (GSI), egg size, and absolute fecundity of Nile tilapia (*Oreochromis niloticus*) were significantly affected by oxygen levels (1.5 ± 1.0, 2.8 ± 1.4, and 6.0 ± 1.8 mgL–1) in a controlled experiment designed to test the hypothesis (D. Pauly. 1984. J. Cons. Int. Explor. Mer, 41: 280–284) that O_2 is the controlling factor for the transition from juvenile to adult in fish, in general, in the context of phenotypic life history plasticity and ‘‘stunting’’ in tilapias. Size at maturity and the estimated asymptotic size decreased with decreasing O_2 concentration, as predicted by Pauly’s hypothesis. All fish matured at the same age (18 weeks old), which is in contrast to conventional definitions of stunting. This finding challenges the suggested plasticity in age at first maturity for tilapia. The results also challenge the hypothesis that stunting is a unique recruitment mechanism, as the smaller fish in the group with low oxygen concentration produced smaller and fewer eggs than the larger fish in the group with high oxygen concentration.

Karl Ottem, Are Nylund, Trond Isaksen & Egil Karlsbakk: forekomst av Francisella-bakterier i vill torsk og i oppdrett

Ottem KF, A Nylund, T E Isaksen, E Karlsbakk and Ø Bergh 2008. Occurrence of *Francisella piscicida* in farmed and wild Atlantic cod, *Gadus morhua* L., in Norway. Journal of Fish Diseases 31: 525 - 534

Abstract: Francisellosis, caused by the bacterium *Francisella piscicida*, has become one of the most serious diseases in Atlantic cod production in Norway. The major aim of this study was to determine the distribution of *F. piscicida* in farmed and wild fish in areas with cod farming along the Norwegian coast, and its occurrence in cod from areas without cod farming. Two real-time PCR assays, targeting the 16S rRNA gene and the FopA gene of *F. piscicida*, were developed since sensitive and specific diagnostic tools are required for detecting asymptomatic carriers of the bacterium. A total of 422 wild cod from 13 sampling areas and 955 farmed cod from 10 areas along the coast of Norway were examined. Using the real-time polymerase chain reaction (PCR) assays, *F. piscicida* was detected in wild populations of cod from all counties examined south of Sogn og Fjordane in southern Norway (overall prevalence 13 %, n = 221). Wild cod north of Sogn og Fjordane were negative for the bacterium (n = 201). Farmed cod from most parts of Norway were *F. piscicida* positive. The apparent absence of the bacterium in wild populations of cod in the northern parts of Norway and its widespread occurrence in wild cod from southern parts of Norway is believed to relate to differences in seawater temperatures.

Are Nylund, K. Watanabe, S. Nylund, M. Karlsen, P. A. Sæther, C. E. Arnesen & E. Karlsbakk: på sporet av kilden til PGD hos laks

Nylund Are, K. Watanabe, S. Nylund, M. Karlsen, P. A. Sæther, C. E. Arnesen & E. Karlsbakk 2008. Morphogenesis of salmonid gill poxvirus associated with proliferative gill disease in farmed Atlantic salmon (*Salmo salar*) in Norway. Archives of Virology 153: 1299-1309

Abstract Proliferative gill disease (PGD) is an emerging problem in Norwegian culture of Atlantic salmon (*Salmo salar*). Parasites (*Ichthyobodo* spp.) and bacteria (*Flexibacter/Flavobacterium*) may cause PGD, but for most cases of PGD in farmed salmon in Norway, no specific pathogen has been identified as the causative agent. However, *Neoparamoeba* sp. and several bacteria and viruses have been associated with this disease. In the spring of 2006, a new poxvirus, salmon gill poxvirus (SGPV), was discovered on the gills of salmon suffering from PGD in fresh water in northern Norway. Later the same year, this virus was also found on gills of salmon at two marine sites in western Norway. All farms suffered high losses associated with the presence of this virus. In this study, we describe the entry and morphogenesis of the SGP virus in epithelial gill cells from Atlantic salmon. Intracellular mature virions (IMVs) are the only infective particles that seem to be produced. These are spread by cell lysis and by “budding” of virus packages, containing more that 100 IMVs, from the apical surface of infected cells. Entry of the IMVs appears to occur by attachment to microridges on the cell surface and fusion of the viral and cell membranes, delivering the cores into the cytoplasm. The morphogenesis starts with the emergence of crescents in viroplasm foci in perinuclear areas of infected cells. These crescents consist of two tightly apposed unit membranes (each 5 nm thick) that seem to be derived from membranes of the endoplasmic reticulum. The crescents develop into spheres, immature virions (IVs), that are 350 nm in diameter and surrounded by two unit membranes. The maturation of the IVs occurs by condensation of the core material and a change from spherical to boat-shaped particles, intracellular mature virions (IMVs), that are about 300 nm long. Hence, the IMVs from the

SGP virus have a different morphology compared to other vertebrate poxviruses that are members of the subfamily *Chordopoxvirinae*, and they are more similar to members of subfamily *Entomopoxvirinae*, genus *Alphaentomopoxvirus*. However, it is premature to make a taxonomic assignment until the genome of the SGP virus has been sequenced, but morphogenesis clearly shows that this virus is a member of family *Poxviridae*.

Yuko Kamisaka, Ann-Elise Jordal, Roland Koedijk & Ivar Rønnestad: forekomst av peptid-transport-enzymet PepT1 i fordøyelsessystemet til torskelarver

Amberg J.J., C. Myr, Y. Kamisaka, A.-E.O. Jordal, M.B. Rust, R.W. Hardy, R. Koedijk and I. Rønnestad 2008. Expression of the oligopeptide transporter, PepT1, in larval Atlantic cod (*Gadus morhua*). Comparative Biochemistry and Physiology Part B: Biochemistry and Molecular Biology 150: 177-182

Abstract: The intestinal absorption of di- and tri-peptides generally occurs via the oligopeptide transporter, PepT1 This study evaluates the expression of PepT1 in larval Atlantic cod (*Gadus morhua*) during the three weeks following the onset of exogenous feeding. Larval Atlantic cod were fed either wild captured zooplankton or enriched rotifers. cDNA was prepared from whole cod larvae preceding first feeding and at 1000 each Tuesday and Thursday for the following three weeks. Spatial and temporal expression patterns of PepT1 mRNA were compared between fish consuming the two prey types using in situ hybridization and quantitative real-time PCR. Results indicated that PepT1 mRNA was expressed prior to the onset of exogenous feeding. In addition, PepT1 was expressed throughout the digestive system except the esophagus and sphincter regions. Expression slightly increased following first-feeding and continued to increase throughout the study for larvae feeding on both prey types. When comparing PepT1 expression in larvae larger than 0.15-mg dry mass with expression levels in larvae prior to feeding, no differences were detected for larvae fed rotifers, but the larvae fed zooplankton had significantly greater PepT1 expression at the larger size. In addition, PepT1 expression in the zooplankton fed larvae larger than 0.15-mg dry mass had significantly greater expression than rotifer fed larvae of a similar weight. Switching prey types did not affect PepT1 expression. These results indicate that Atlantic cod PepT1 expression was slightly different relative to dietary treatment during the three weeks following first-feeding. In addition, PepT1 may play an important role in the larval nutrition since it is widely expressed in the digestive tract.

Malin Daase & Dag L. Aksnes: vertikalfordeling av copepoder i Arktis

Daase, Malin, Eiane, Ketil, Aksnes, Dag L., Vogedes, Daniel 2008. Vertical distribution of *Calanus* spp. and *Metridia longa* at four Arctic locations. MARINE BIOLOGY RESEARCH 4: 193-207

Abstract: We investigated the vertical distribution of *Calanus finmarchicus*, *C. glacialis*, *C. hyperboreus* and *Metridia longa* at four locations around the archipelago of Svalbard in autumn. The older and larger copepodites of *Calanus* spp. were generally located deeper in the water column. Differences in vertical distribution between stations partly reflected a south-north gradient in developmental progress with higher abundance of older stages in the southern locations. The *C. finmarchicus* and *M. longa* observations were consistent with the hypothesis that the developmental stages distributed according to certain preferences for light intensity, and different optical properties at the four locations are likely to have affected the vertical distributions. Diel vertical migration was only observed for older developmental stages of *M. longa* while young stages of *M. longa* remained in deep waters both day and night. A mortality index indicated that non-migrating *Calanus* spp. suffered higher mortality than migrating *M. longa*.

Gaute Velle: mygg-hode-estimering i sedimentprøver ved tillegging av markører

Velle, Gaute & Larocque, Isabelle 2008. Assessing chironomid head capsule concentrations in sediment using exotic markers. JOURNAL OF PALEOLIMNOLOGY 40: 165-177

Abstract: All the chironomid head capsules in a sediment sample are normally extracted to determine the concentration of chironomids. This method may be tedious since a sample may contain hundreds of head capsules. We have tested a method to estimate the concentration of chironomids in sub-samples and assessed the potential taxonomic bias generated when only a part of each sediment sample is sorted. To allow calculation of concentrations, a known quantity of exotic markers (microspheres with diameter 149-350 mu m) was added to the sample. The number of head capsules in

the total sample was estimated according to the ratio between the retrieved numbers of microspheres to head capsules in the sub-sample. According to our results, the chironomid concentrations estimated from sub-samples were statistically similar to the concentrations obtained by processing the full sample. Also, a sub-sample containing at least 75 head capsules was likely to have similar taxa abundances and taxa richness as the full sediment sample. These results indicate that exotic markers may be added to chironomid samples for representative concentration estimation. The method may potentially be used for other biological groups than chironomids.

Rune Rosland: påliteligheten av estimater av torsk fra norske fjorder ved bruk av trål

Lunde, T. M., Godø, O. R., and Rosland, R. 2008. Reliability of trawl surveys on cod in Norwegian fjords. – ICES Journal of Marine Science, 65: 937-945.

Abstract: According to ICES, the International Council for the Exploration of the Sea, populations of coastal cod (CC) in Norway north of 62 degrees N have been declining since 1994. The estimates are based on analytical assessment in which the most recent estimates are tuned with survey information. We evaluate the quality of bottom-trawl surveys conducted in four North Norwegian fjords during autumn of the years 1995-2004. Surveys tended to be carried out later in autumn in the more recent years than in the earlier years. Consequently, there was a significant decrease in sun's altitude from 1995 to 2004 at the time the surveys were carried out. Further inconsistency among years dominated when comparing catch per unit effort (cpue) by year class and age over time. Often, the observed cpue at age a + 1 in year y + 1 was greater than in year y at age a. Spearman's rank correlation of cpue vs. year also demonstrated inconsistencies in the data. The problems related to separating CC and northeast Arctic cod are discussed.

Kathy Willis: langtidsperspektiv nyttig i skogbevaringsplanlegging

Feurdean, Angelica & Katherine J. Willis 2008. The usefulness of a long-term perspective in assessing current forest conservation management in the Apuseni Natural Park, Romania. Forest Ecology and Management 256: 421-430

Abstract: The forest ecosystem of the Apuseni National Park (ANP) in NWRomania is recognized for its high species and genetic diversity and is protected through various conservation measures. As ANP is the most populated natural park in Romania, the focus is on the need for communities to manage, sustain and prosper by using, exploring and sustaining the natural resources. But what activities are the most appropriate for the conservation of a highly diverse natural forest? This paper presents results from a long-term ecological study using fossil pollen, microscopic and macroscopic charcoal and AMS14C dating on a site in the ANP in order to examine how the interaction between climate change, human activities and other disturbances have shaped the present protected landscapes over the last 5700 years in this part of the reserve. Results from this study show that the landscape in this region has been continuously forested over the last 5700 years BP, but the forest composition and structure have been dynamic throughout much of the time. In particular, distinct changes in forest composition have occurred over the last 700 years of the record. *Fagus sylvatica* was the major taxon between 5200 and 200 years BP and its dominance is associated with the highest forest stability. The formation of the current *Picea abies* forests started 400 years ago and spruce became the dominant forest species during the last two centuries as a result of selective forest clearance, intensive grazing, and more recently, plantations. This led to a large reduction in forest diversity, decline of *F. sylvatica* and local extinction of several species including *Abies alba*, *Ulmus*, *Tilia*, and *Acer*. Our results show the high conservation values of *A. alba* and *F. sylvatica* in the ANP. Current management practices that allow the anthropogenic activities of timber production and fast tree regeneration, usually involving the plantation of *P. abies* in this part of the ANP are not in keeping with the NATURA 2000 objectives of ensuring the persistence of the most vulnerable species and habitats.

Nils-Kåre Birkeland: 2 nye ekstremofile bakterier fra varme kilder på Kamchatka

Miroshnichenko, Margarita L., Kublanov, Ilya V., Kostrikina, Nadezhda A., Tourova, Tatyana P., Kolganova, Tatyana V., Birkeland, Nils-Kåre, Bonch-Osmolovskaya, Elizaveta A. 2008. *Caldicellulosiruptor kronotskyensis* sp nov and *Caldicellulosiruptor hydrothermalis* sp nov., two extremely thermophilic, cellulolytic, anaerobic bacteria from Kamchatka thermal springs.

INTERNATIONAL JOURNAL OF SYSTEMATIC AND EVOLUTIONARY MICROBIOLOGY 58: 1492-1496

Abstract: Five novel strains (2002(T), 2902, 2006, 108(T) and 117) of cellulose-degrading, anaerobic, thermophilic bacteria were isolated from terrestrial hot springs of Kamchatka (Far East, Russia). Strains 2002 T and 108(T) were non-spore-forming bacteria with a Gram-positive type cell wall and peritrichous flagella. Optimum growth of strains 2002(T) and 108(T) occurred at pH 7.0 and at temperatures of 70 and 65 degrees C, respectively. The G + C contents of the DNA of strains 2002(T) and 108(T) were 35.1 and 36.4 mol%, respectively. Comparative 16S rRNA gene sequence analysis revealed that the isolates belonged to the genus *Caldicellulosiruptor*. However, DNA-DNA hybridization experiments indicated that the levels of relatedness between strains 2002(T) and 108(T) and those of recognized members of the genus *Caldicellulosiruptor* ranged between 32 and 54%. Based on both phenotypic and genomic differences, strains 2002(T) and 108(T) are considered to represent two novel species of the genus *Caldicellulosiruptor*. The names proposed for these organisms are *Caldicellulosiruptor kronotskyensis* sp. nov. (type strain 2002(T) =DSM 18902(T) =VKM B-2412(T)) and *Caldicellulosiruptor hydrothermalis* sp. nov. (type strain 108(T) = DSM 18901(T) =VKM B-2411(T)).

Sigrid Haande: genetisk karakterisering av invaderende cyanobakterie

Haande, Sigrid, Thomas Rohrlack, Andreas Ballot, Kjetil Røberg, Randi Skulberg, Martin Beck and Claudia Wiedner 2008. Genetic characterisation of *Cylindrospermopsis raciborskii* (Nostocales, Cyanobacteria) isolates from Africa and Europe. Harmful Algae 7: 692-701

Abstract The invasive cyanobacterium *Cylindrospermopsis raciborskii* is increasingly spreading in temperate freshwater habitats worldwide and is of major concern due to its ability to produce potent toxins. It is, therefore, important to understand the mechanisms behind the dispersal of this species. Different hypotheses have been proposed to explain the phylogeography and mechanisms underlying the recent expansion of *C. raciborskii* into temperate latitudes, but there is still no conclusive evidence whether the obvious ecological success of *C. raciborskii* is due to selection mechanisms, physiological tolerance, climatic change or radiation after the last ice age. In the present study, new isolates of *C. raciborskii* from Europe and Africa were genetically characterised by sequencing the ITS1, PC-IGS, *nifH* and *rpoC1* genes and compared to corresponding sequences of *C. raciborskii* available in GenBank in order to test different phylogeographical hypotheses. The strains were also morphologically examined and screened for production of the hepatotoxic cylindrospermopsin (CYN). We clearly demonstrate a variation among the populations of *C. raciborskii* from different geographical regions. The phylogenetic analyses revealed a clustering of the strains due to geographic origin. The ITS1 and *nifH* genes separated into American, European and Australian–African groups, whereas the PC-IGS and *rpoC1* separated into American and European/Australian/African groups. An analysis of concatenated data supported the division into American, European and African/Australian groups, and even indicated a subdivision into an African and an Australian group. Our findings do not strongly support any of the existing hypotheses on the phylogeography of *C. raciborskii*, and most likely a combination of these hypotheses is the best approach to understand the evolution and dispersal of this species.