

BIO-info 11/2013, 22. mars 2013 [BIO: sakslister og møtereferater](#) [BIO-info arkiv](#)
submission deadline to bio.info@bio.uib.no is Wednesday 16:00

Fra toppen!

God påske!

Jeg sitter på Svalbard og skriver denne påskelederen. Det var varslet nordlys i kveld, men så skyet det over, etter mange flotte, klare dager i dette helt spesielle landskapet. I går var jeg på tur til en isgrotte med min kollega fra NTNU, og fikk se hvordan smeltevannet skurer isbreen på innsiden om sommeren. Om vinteren blir det fantastiske ganger å vandre i, helst med hjelm og brodder.

Med i bagasjen har jeg ulike gjøremål, i tillegg til undervisningen for en gjeng engasjerte studenter med interesse for arktisk miljøtoksikologi: Norhed-søknader som skal prioriteres (BIO har sendt av gårde seks søknader med ulike partnere i sør), sammendrag til en internasjonal konferanse som skal evalueres for poster eller foredrag, og ulike tekster som skal leses og kommenteres, i tillegg til en del løpende saker som må tas etter hvert.

Fredag går turen sørover, selv om påskeferie på Svalbard virker vel så fristende som noen dager på Geilo. Forhåpentligvis byr det seg en mulighet til det en annen gang. God og velfortjent påskeferie til alle BIO-venner!



Påskehilsen fra Anders

Ukens bilde



Oppgradert kurssal på MBS

Fotograf: **Havdan Gjertsen**

Kurssalen på Marinbiologisk stasjon er oppgradert og kapasiteten er nå doblet til 24 plasser. Vi håper på god og aktiv bruk av kurssalen framover!

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

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BIO-info

Nyheter fra Institutt for biologi

Faste lenker:

[BIO-info arkiv](#) [Sakslistor & referater](#) [BIOs interne websider](#) [BIO's eksterne websider](#)
[Facebook BIO](#) [Facebook STIM](#) [Facebook UiB](#)

VIKTIG INFORMASJON

Verneombud for perioden 2013-2014; Academic Writing Workshop with focus on English Usage; Kurstilbod i nynorsk for framandspråklege tilsette ved UiB; Minner om at frist for BIOs såkornsprosjekt er 16 april

Verneombud for perioden 2013-2014

Resultater fra verneombudsvalget, behandlet i Arbeidsmiljøutvalget 13.02.13:

Universitetets hovedverneombud

Else Jerdal

Hovedverneombud ved Det matematisk-naturvitenskapelige fakultet

Hovedverneombud: Lill Kristin Knudsen

Varahovedverneombud: Guttorm Alendal

Verneombud ved BIO

A-blokken

Verneombud: Lene Synnøve Halvorsen

Varaverneombud: Annike Lygren

B- og C-blokken

Verneombud: Gunnar Bratbak

Varaverneombud: Marit Steine Madsen

Bioblokken

Verneombud: Rita Karlsen

Varaverneombud: Roger Lille-Langøy

Marinbiologisk stasjon

Verneombud: Mette Hordnes

Varaverneombud: Knut Tomas Holden Sørli

Oversikt over universitetets verneområder med verneombud er publisert på UiBs nettsider «Verneområder og verneombud» (intranettet). Listen skal flyttes til de nye nettsidene for ansatte - «ressurssidene» når nettsidene foreligger.



Academic Writing Workshop with focus on English Usage

17 – 18 April

And

SPRÅK VED UiB

Kurstilbod i nynorsk for framandspråklege tilsette ved UiB,

3, 10 or 17 april

More info under «kommende møter og seminar»

BIO-info

Nyheter fra Institutt for biologi

Minner om at frist for BIOs såkornsprosjekt er 16 april.

Flere detaljer kommer i bio-info over påske

BIO-arrangement uken etter påske

Dato	Handlinger, navn	Tid og sted
4th April	BIO-seminar: Øyvind Fiksen , 4th April, 14.15: "Trait-based ecosystem models from nutrients and microbes to zooplankton and fish"	14.15 – 15.00 Lille Aud. (HiB)

NYHETER OG GENERELL INFORMASJON

Studier i Sør-Afrika; Nyheter fra SIU; Etikk i praksis;

Tilbud til studenter som ønsker å dra til Sør-Afrika

ANSA (Association of Norwegian Student Abroad) Sør-Afrika ønsker å nå ut til studenter som ønsker å studere i Sør-Afrika men som kanskje synes søknadsprosessen virker tung og dermed avstår fra å søke.

Studenter henvises til ANSA Sør-Afrika sin facebook side, [internett side](#) eller skrive mail til nestleder.sorafrika@ansa.no

Nyheter fra SIU

Siste nyhetsmagasin finner du [her](#)

Etikk i praksis, invitasjon til bidrag



VI SØKER BIDRAG TIL VÅRE TO NESTE UTGAVER

NR 2/2013: Åpent nummer

Høstens utgave vil ikke bli et temanummer. Vi ønsker med dette helt åpne nummeret å markere at vi ønsker å få tilsendt bidrag fra alle temafelt kontinuerlig.

Frist for innsending er 1. juli 2013

NR 1/2014: Styring av naturressurser

Hvordan skal verdens naturressurser forvaltes, og hvem skal kontrollere dem? Til dette temanummeret etterspør vi kritiske undersøkelser av hvordan tilgangen på naturressurser påvirker institusjoner og politikk, og normative drøftinger av hva slags styringsformer som bør etterstrebes. *Fullstendig beskrivelse finnes [her](#).* Frist 5. januar 2014

Det gjennomføres redaktørskifte i Etikk i praksis fra og med nummer 2/2013.

Påtroppende redaktører er professor May Thorseth og førsteamanuensis Siri Granum Carson, begge ved Program for anvendt etikk, NTNU.

CALL FOR PAPERS

Issue 2/2013: Open issue

Issue 1/2014: Natural resource governance. [Papers invited](#)

BIO-info

Nyheter fra Institutt for biologi

We accept papers in all Scandinavian languages as well as English

GENERAL CALL FOR PAPERS

Alle temanummer har åpne seksjoner / All thematic issues also include an open section.

For more information about the journal and how to submit your paper, visit [Akademika forlag](#).

Etikk i praksis is an open access journal, earlier issues are available [here](#)

Mvh

Redaktører i Etikk i praksis,

Norges teknisk-naturvitenskapelige universitet (NTNU)

redaktor@etikkipraksis.org

NYE UTLYSNINGER

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

SPIRE; SKOK; Nytt om EU-forskningen 9/13; Forskningsrådets kurs om innovasjonsledelse og forretningsmodeller; Visiting Fellowship for training on-board cruise;

Call for SPIRE proposals 2013

Division of Research Management invite applicants to apply for funding to the University of Bergen's Strategic Programme for International Research and Education (SPIRE) in 2013. The programme aims to support the UiB strategy and plan of action for international activities 2011-2015. Applicants are particularly encouraged to apply for funding for collaborations with UiB's strategic international network partners (see Appendix 1 in the enclosed Guidelines for Applicants).

Please find enclosed:

[Guidelines for Applicants](#)

[Application Form](#)

Note: Applicants must use the enclosed SPIRE Application Form when applying for funding. Academic members of staff from all faculties, departments and centres can apply for SPIRE funding. Applications should be submitted from the Department to the Faculty. The Faculty must forward all applications received to the Division of Research Management

Det kan søkes om SPIRE-midler i tre kategorier:

- (1) SPIRE midler for internasjonale nettverks-/partnerskapssamarbeid.
- (2) SPIRE midler for internasjonal workshop og/eller etablering av samarbeid.
- (3) SPIRE gjesteforskermidler

Instituttene foretar vurdering og rangering av søknadene i kategori 2 og 3, før søknadene sendes til fakultetet. Søknader kan sendes på epost til [Anne Fjellbirkeland](#) innen torsdag 11 april kl 12

Fakultetsledelsen vil foreta en rangering av søknadene før oversending til Forskningsadministrativ avdeling.

SKOK UTLYSER PROSJEKTUTVIKLINGSSTIPEND PÅLYDENDE KR 50 000

Senter for kvinne- og kjønnsforskning (SKOK) ved Universitetet i Bergen lyser ut eitt stipend på kr 50 000 til ein person av det underrepresenterte kjønnnet ved eininga (m.h.t. fast tilsette) med fullført

mastergrad, for å utvikle ein ph.d.-søknad med kjønnsfagleg profil. Målet med stipendet er å fremme kjønnsrelatert forskning ved UiB. Mer info [11prosjektuviklingsstipend.pdf](#)

Forskningsrådet, Nytt om EU-forskningen 9/13

Her er ny utgave av nyhetsbrevet om EU-forskningen, denne gang om forskningsinfrastruktur, energi, KIC'er og revisjon. God påske! [Les mer](#)

Outcomes for all RCN applications now in one place

The results of the application processing for all Research Council of Norway programmes and activities have now been consolidated on a designated website page. The list of approved grants for each programme will be published as soon as the assessment process has been concluded.

[Read more](#)

Visiting Fellowship for training on-board an Atlantic Meridional Transect cruise in 2013

POGO Visiting Fellowship for training on-board an Atlantic Meridional Transect (AMT) cruise in 2013
POGO is pleased to announce that it will once again offer a special POGO Visiting Fellowship for training on-board an Atlantic Meridional Transect (AMT) cruise in 2013. This initiative is now in its sixth year and has proved to be a very successful training programme providing hands-on, sea-going experience to young scientists from developing countries, and the opportunity to be involved in an internationally renowned scientific programme.

The selected candidate will have the opportunity to visit Plymouth Marine Laboratory (PML) in the UK, for one month prior to the start of the cruise to participate in cruise preparation and planning; to go on the cruise (10 October - 24 November 2012 from UK to Chile) and help make hydrological, bio-optical and ecological observations; and after the cruise to spend one additional month at PML, learning to analyse the results statistically and interpret them. The fellowship will provide a round-trip ticket to the UK and a stipend for living expenses for up to two months stay in the UK; flights and accommodation associated with joining the ship; ship messing fee; seafaring medical and sea survival course.

The programme is open to scientists, technicians, graduate students (PhD/MSc) and post-doctoral fellows involved in oceanographic work at centres in developing countries and countries with economies in transition.

The application deadline is **3rd May 2013**. [More info](#)

Kurs i innovasjonsledelse og forretningsmodeller

Du kan få støtte fra HAVBRUK hvis du er vil delta på Forskningsrådets kurs om innovasjonsledelse og forretningsmodeller. [Les mer](#)

KOMMENDE MØTER OG SEMINAR

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

Academic Writing Workshop with focus on English Usage; Kurstilbod i nynorsk for framandspråklege tilsette ved UiB; Marine microalgae as a sustainable EPA- and DHA-source for use in aquafeed; Human Security Conference, Bergen; 48th European Marine Biology Symposium; STED-mini workshop - Bergen week 16; Ph.D. course in Denmark;

Academic Writing Workshop with focus on English Usage

Time: 17.4.2013 - 18.4.2013 9.00-15.30



Location: Scandic Neptun Hotel, Valkendorfsгатen 8

Time: 9.00-15.30 each day

This is a two-day workshop in academic writing designed for PhD candidates where the focus is on the use of English, not the writing process. The workshop will be relevant for all disciplines at UiB and judging from past evaluations it will be useful for both international and Norwegian candidates. The workshop includes individual discussion of edited texts submitted by participants before the course. As the use of web resources is central, participants should bring a laptop with Internet.

Workshop topics

- Characteristics of academic writing
- Readability
- Word order
- Avoiding typical errors
- Nominalization
- Web resources
- Stylistic issues and style guides
- Varieties of English
- Structure and format
- Editing your work
- Presenting in English
- Individual discussion based on submitted texts
- Learning outcomes:

The course will help participants to write and publish documents in academic English. Participants will become familiar with a variety of web-based resources.

Target group:

UiB PhD candidates, however other academic staff at UiB are welcome to apply. The workshop will be in English.

Working methods:

A short presentation of a theme will be followed by exercises.

There will also be individual discussion.

Course material:

- Course compendium. Each participant will receive these free of charge.

Lecturer:

Stewart Clark, Senior Adviser, NTNU and English language consultant.

There is no course fee for UiB employees.

Register for the course here: https://skjema.app.uib.no/academic_writing

Kurstilbod i nynorsk for framandspråklege tilsette ved UiB

Personalavdelinga i samarbeid med Institutt for lingvistiske, litterære og estetiske studiar (LLE) tilbyr eit innføringskurs i nynorsk for tilsette som ikkje har norsk som morsmål.

Tid og stad:

- Onsdag 3. april kl.12.15 - 16.00
- Onsdag 10.april kl.12.15 - 16.00
- Onsdag 17. april kl.12.15 - 16.00

Totalt 12 timar.

Kurset vert halde i Christiesgate 18, rom 3.43/44

Kurshaldar: Universitetslektor Aasne Vikøy, LLE

Målgruppe:

Framandspråklege tilsette med gode kunnskapar i norsk. Deltakarane bør ha fullført trinn 3 i norsk som andrespråk eller ha tilsvarande kunnskapar.

Mål:

- å kjenne til viktige skilnader mellom bokmål og nynorsk
- å lese og forstå nynorske tekstar
- å skrive og omsetje (frå bokmål) enkle tekstar på nynorsk

Innhald:

- bakgrunn for nynorsk – språkhistorie på fem minutt
- nynorskens status: statistikk og aktuell språkpolitikk
- mangfaldet i språket – dialektprøver
- kva er skilnaden frå bokmål – systematisera trekk
- minigrammatikk i nynorsk og nokre oppgåver knytt til dette
- omsetjingsoppgåver frå bokmål til nynorsk

Påmelding: <https://skjema.app.uib.no/nynorsk002/>

For meir informasjon, ta kontakt med Ellen M Grong, ellen.grong@adm.uib.no, tlf 82214

Marine microalgae as a sustainable EPA- and DHA-source for use in aquafeed

Konferanse i Bergen 30.april med fokus på mikroalger som mulig omega-3 kilde inn mot fiskefôr.

Dette er basert på et FHF-prosjekt som UNI har hatt sammen med SINTEF, og resultatene fra utredningsprosjektet skal presenteres. Men det vil også være bidrag fra en rekke internasjonale referansemiljø som belyser de forskningsutfordringene som er relatert til temaet for konferansen.

Invitasjonen finner du her - ferdig program blir sendt ut etter påske.

Registrering/påmelding er gratis. 11ProAlgae.pdf

Invitasjon til Human Security Conference, Bergen 15 Mai 2013

Universitetet i Bergen, University of Winnipeg og University of Ottawa har gleden av å invitere til konferansen "Lysøen Revisited - 15 years of Human Security" i Bergen 15. mai 2013. På konferansen vil vi få høre mer om temaer som:

- Skal det internasjonale samfunnet gripe inn for å beskytte menneskers sikkerhet?
- Fra Midtøsten til Balkan og tilbake: Militære realiteter og politiske paradigmer
- FN og fremtiden for Human Security nettverket

Konferansen markerer at det er 15 år siden Norges daværende utenriksminister Knut Vollebæk og Canadas daværende utenriksminister Lloyd Axworthy skrev under avtalen om Human Security, «The Lysøen Declaration», som innledet et større samarbeid i Human Security Network. På konferansen blir det innlegg av blant andre:

Jan Egeland, direktør i Human Rights Watch, Europe

General Robert Mood, tidligere sjef for FNs observatørstyrke i Syria

Knut Vollebæk, høykommissær for nasjonale minoriteter i OSSE og tidligere utenriksminister i Norge

Lloyd Axworthy tidligere utenriksminister i Canada og rektor ved University of Winnipeg

Francis Deng, Sør-Sudans første ambassadør til FN

Adama Dieng, spesialrådgiver til FNs generalsekretær for forebygging av folkemord

Du kan lese mer om konferansens program, keynote speakers og moderators [her](#):

Konferanseavgiften er NOK 100 påmeldingslenke til konferansen finner du [HER](#).

Siste mulighet for påmelding er 15. april.

BIO-info

Nyheter fra Institutt for biologi

48th European Marine Biology Symposium, Galway, Ireland

To get reminders of important deadlines and all the latest news follow us on:

Twitter: @EMBS2013

Facebook: <https://www.facebook.com/Embs2013Galway>

The **abstract submission deadline** for the 48th European Marine Biology Symposium is **March 25th**.
[Conference website](#)

STED-mini workshop - Bergen week 16

Dear MIC users

Leica is planning to arrange a STED mini-workshop in Bergen in week 16 (middle of April). You will learn about the technique, look at some standard preparations and even have the possibility to bring your own samples. The workshop is free of charge and each group of people will have half a day of "hands on".

People interested in participating can show their interest by sending an email to Simen Gylderud Owe at Ortomedic (<mailto:simen.owe@ortomedic.no>). He will be arranging and coordinating the workshop.

Ph.D. course in Denmark

R for Macroecological and Global Change Studies

A "Stay or Go" Nordforsk network PhD summer school

Organizer: Brody Sandel, Ecoinformatics and Biodiversity Group, Department of Bioscience, Aarhus University

Venue: The beautiful Sandbjerg Estate in southern Denmark

Dates: June 9th-14th (Week 25) 2013

More info [11Course.pdf](#)

LEDIGE STILLINGER

Mer info finner du [her](#). Stillinger utlyst på BIO finner du nederst til høyre på instituttets [nettside](#).

Tenure track assistant professor in Marine Ecological Genetics



The EuroMarine Vision – to integrate research from genes to ecosystems in changing Oceans; to better understand how marine organisms and marine ecosystems function; and to support the sustainable use of the seas and oceans for the increasing needs of society.

A job vacancy is available at The Centre for Ecological and Evolutionary Studies (CEES) at the University of Groningen for a tenure track assistant professor in Marine Ecological Genetics.

Candidates can submit their application before 1 May 2013.

Please find the details of this position in the [attached Job description](#).

NYE ARTIKLER

***A full listing of BIO's ISI publications can be found on BIO's internal web pages. [Click here](#)

Christophersen; Magnesen; Willis; Folkvord; Andreson; Ekman; Andersen; Nilsen; Yadetie; Karlsen; Lanzen; Goksøyr; Knutsen (NB med interessant bakgrunnshistorie)

Andersen, S, **Christophersen, G, Magnesen, T**. Implications of larval diet concentration on post-larval yield in a production scale flow-through system for scallops (*Pecten maximus* Lamarck) in Norway AQUACULTURE INTERNATIONAL Volume: 21 Issue: 2 Pages: 435-452 DOI: 10.1007/s10499-012-9570-0 Published: APR 2013

Abstract: In order to optimize *Pecten maximus* larval performance and post-larval yield, larvae were fed five algal concentrations in the range 3-20 cells μ L⁻¹ in 2,800-L flow-through tanks without prophylactic antibiotics. Competent larvae were transferred to a commercial hatchery for settlement and provided uniform conditions for 4 weeks to observe effects. Increased diet concentration increased the sum of fatty acids (FA) in the total larval population, reaching 7 and 25 ng FA larvae⁻¹ at 3 and 16 cells μ L⁻¹, respectively. The FA level in competent larvae was not affected by diet concentration and ranged from 30 to 46 ng larvae⁻¹. Increased diet concentration increased larval growth rate, and the larvae were ready to settle 5 days earlier when fed 16 cells μ L⁻¹ compared to 3 cells μ L⁻¹. Larval ingestion rate increased during life span and with increased larval diet concentrations, but a considerable amount (40-60 %) of the added algal cells was lost from the larval rearing tanks due to the seawater flow. There was no effect on larval survival, final post-larval shell height, % of competent larvae transferred to settlement, or total yield of post-larvae. Final mean post-larval shell height was 509 μ m and 25.5 % of competent larvae settled, resulting in a final post-larval yield between 6.9 and 17.6 % of the initial number of d3 larvae. Competent larvae with similar FA content produced similar numbers of post-larvae independent of diet concentration, even if higher diet concentrations resulted in higher rates of larval development and metamorphosis.

Baker, AG, Bhagwat, SA, **Willis, KJ** Do dung fungal spores make a good proxy for past distribution of large herbivores? QUATERNARY SCIENCE REVIEWS Volume: 62 Pages: 21-31 DOI: 10.1016/j.quascirev.2012.11.018 Published: FEB 15 2013

Abstract: The importance of herbivory as a long-term driver of ecosystem change is a topic that has been hotly debated over the past few years. An understanding of the interaction between herbivores and ecosystems is particularly important for conservation policies aimed at re-wilding. Dung fungal spores have been highlighted as an important potential proxy to reconstruct large herbivore densities across past landscapes. However, this proxy appears to have been used and interpreted in a variety of ways in addition to highly variable taxonomic identification of dung fungal spores. Here we review studies that have utilised fungal spore assemblages to assess past herbivore presence and test the validity of this method. We aim to determine whether there is a set of identifiable dung fungal spores that can unequivocally track variation of large herbivore activity through time and across regions. Our meta-analysis identifies: (1) spore types that are commonly found to be indicative of large herbivores and their geographical ranges, (2) linkages between these spores and their biological origin, and (3) the most appropriate quantitative method to express their abundance for comparisons through time and across sites.

Hansen, TW, **Folkvord, A**, Grotan, E, Saele, O Genetic ontogeny of pancreatic enzymes in *Labrus bergylta* larvae and the effect of feed type on enzyme activities and gene expression COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY B-BIOCHEMISTRY & MOLECULAR BIOLOGY Volume: 164 Issue: 3 Pages: 176-184 DOI: 10.1016/j.cbpb.2012.12.001 Published: MAR 2013

Abstract: A newly cultivated wrasse species, *Labrus bergylta*, have shown great potential for use in Atlantic salmon (*Salmo salar*) farms in the battle against sea lice (*Lepeoptheirus salmonis*) infections. Hatchery reared *L. bergylta* were studied from 2 to 55 DPH to examine the molecular basis of digestive ontogeny related to the pancreas. An isolated feeding trial was performed on 27-34 DPH larvae to compare the effect of diet on enzyme activity and the possible exogenous contribution by live feed. The following genes coding for key pancreatic enzymes were analyzed by qPCR: trypsin, Cyp7 A1, BAL, sPLA(2) 1B, amylase and pancreatic chitinase. Enzyme activity was measured on trypsin, neutral lipase, sPLA(2), amylase and chitinase in fed and unfed larvae. We did not observe any effects

of the formulated diet v.s. rotifers on enzyme activities of neutral lipase, chitinase and sPLA(2). However, a probable feed-dependency was observed at a transcriptional level, where rotifers seem to stimulate upregulation. The regulation of BAL was the only exception, where an upregulation was observed after weaning both in the ontogeny series and the experimental part. Our data on pancreatic chitinase and amylase mRNA levels suggest the importance of carbohydrates in the diet of early larval and juvenile *L. bergylta*.

Lommer, M, Specht, M, Roy, AS, Kraemer, L, **Andreson, R**, Gutowska, MA, Wolf, J, Bergner, SV, Schilhabel, MB, Klostermeier, UC, Beiko, RG, Rosenstiel, P, Hippler, M, LaRoche, J. Genome and low-iron response of an oceanic diatom adapted to chronic iron limitation GENOME BIOLOGY Volume: 13 Issue: 7 DOI: 10.1186/gb-2012-13-7-r66 Published: 2012

Abstract: Background: Biogeochemical elemental cycling is driven by primary production of biomass via phototrophic phytoplankton growth, with 40% of marine productivity being assigned to diatoms. Phytoplankton growth is widely limited by the availability of iron, an essential component of the photosynthetic apparatus. The oceanic diatom *Thalassiosira oceanica* shows a remarkable tolerance to low-iron conditions and was chosen as a model for deciphering the cellular response upon shortage of this essential micronutrient.

Results: The combined efforts in genomics, transcriptomics and proteomics reveal an unexpected metabolic flexibility in response to iron availability for *T. oceanica* CCMP1005. The complex response comprises cellular retrenchment as well as remodeling of bioenergetic pathways, where the abundance of iron-rich photosynthetic proteins is lowered, whereas iron-rich mitochondrial proteins are preserved. As a consequence of iron deprivation, the photosynthetic machinery undergoes a remodeling to adjust the light energy utilization with the overall decrease in photosynthetic electron transfer complexes.

Conclusions: Beneficial adaptations to low-iron environments include strategies to lower the cellular iron requirements and to enhance iron uptake. A novel contribution enhancing iron economy of phototrophic growth is observed with the iron-regulated substitution of three metal-containing fructose-bisphosphate aldolases involved in metabolic conversion of carbohydrates for enzymes that do not contain metals. Further, our data identify candidate components of a high-affinity iron-uptake system, with several of the involved genes and domains originating from duplication events. A high genomic plasticity, as seen from the fraction of genes acquired through horizontal gene transfer, provides the platform for these complex adaptations to a low-iron world.

Rolstad, J, **Ekman, S, Andersen, HL**, Rolstad, E Genetic variation and reproductive mode in two epiphytic lichens of conservation concern: a transatlantic study of *Evernia divaricata* and *Usnea longissima* BOTANY-BOTANIQUE Volume: 91 Issue: 2 Pages: 69-81 DOI: 10.1139/cjb-2012-0202 Published: FEB 2013

Abstract: North European epiphytic lichens are often genetically impoverished compared with their North American counterparts. This has been hypothesized to impede sexual reproduction due to reduced chances of finding compatible mating type partners. We compared genetic variation and reproductive mode in two threatened Scandinavian lichens, *Evernia divaricata* and *Usnea longissima*, with more viable populations in North America to see (i) if these species also show genetical depletion in northern Europe and (ii) if the occurrence of sexual propagules (ascospores in apothecia) is more prevalent in genetically diverse populations. Genetic variation of the fungal component was assessed by sequencing two nuclear rDNA gene regions (ITS and IGS) in 1005 and 1477 thalli, collected from 92 and 160 localities of *E. divaricata* and *U. longissima*, respectively. Scandinavian populations of both species were almost devoid of genetic variation compared with much higher genetic diversity in North America. We found no support for the proposed relationship between genetic diversity and fertility. Fertile thalli were found in several genetically invariable populations. Fertility increased with population size and regional abundance in *E. divaricata*, but not in *U. longissima*. In Scandinavia, *E. divaricata* was more fertile than previously recorded, whereas all sampled populations of *U. longissima* were sterile and possibly clonal.

Torrissen, O, Jones, S, Asche, F, Guttormsen, A, Skilbrei, OT, **Nilsen, F**, Horsberg, TE, Jackson, D

Salmon lice - impact on wild salmonids and salmon aquaculture JOURNAL OF FISH DISEASES Vol: 36 Issue: 3 Special Issue: SI Pages: 171-194 DOI: 10.1111/jfd.12061 Published: MAR 2013

Abstract: Salmon lice, *Lepeophtheirus salmonis*, are naturally occurring parasites of salmon in sea water. Intensive salmon farming provides better conditions for parasite growth and transmission compared with natural conditions, creating problems for both the salmon farming industry and, under certain conditions, wild salmonids. Salmon lice originating from farms negatively impact wild stocks of salmonids, although the extent of the impact is a matter of debate. Estimates from Ireland and Norway indicate an odds ratio of 1.1:1-1.2:1 for sea lice treated Atlantic salmon smolt to survive sea migration compared to untreated smolts. This is considered to have a moderate population regulatory effect. The development of resistance against drugs most commonly used to treat salmon lice is a serious concern for both wild and farmed fish. Several large initiatives have been taken to encourage the development of new strategies, such as vaccines and novel drugs, for the treatment or removal of salmon lice from farmed fish. The newly sequenced salmon louse genome will be an important tool in this work. The use of cleaner fish has emerged as a robust method for controlling salmon lice, and aquaculture production of wrasse is important towards this aim. Salmon lice have large economic consequences for the salmon industry, both as direct costs for the prevention and treatment, but also indirectly through negative public opinion.

Yadete, F, Karlsen, OA, Lanzen, A, Berg, K, Olsvik, P, Hogstrand, C, Goksoyr, A Global transcriptome analysis of Atlantic cod (*Gadus morhua*) liver after in vivo methylmercury exposure suggests effects on energy metabolism pathways AQUATIC TOXICOLOGY Volume: 126 Pages: 314-325 DOI: 10.1016/j.aquatox.2012.09.013 Published: JAN 15 2013

Abstract: Methylmercury (MeHg) is a widely distributed contaminant polluting many aquatic environments, with health risks to humans exposed mainly through consumption of seafood. The mechanisms of toxicity of MeHg are not completely understood. In order to map the range of molecular targets and gain better insights into the mechanisms of toxicity, we prepared Atlantic cod (*Gadus morhua*) 135k oligonucleotide arrays and performed global analysis of transcriptional changes in the liver of fish treated with MeHg (0.5 and 2 mg/ kg of body weight) for 14 days. Inferring from the observed transcriptional changes, the main pathways significantly affected by the treatment were energy metabolism, oxidative stress response, immune response and cytoskeleton remodeling. Consistent with known effects of MeHg, many transcripts for genes in oxidative stress pathways such as glutathione metabolism and Nrf2 regulation of oxidative stress response were differentially regulated. Among the differentially regulated genes, there were disproportionate numbers of genes coding for enzymes involved in metabolism of amino acids, fatty acids and glucose. In particular, many genes coding for enzymes of fatty acid beta-oxidation were up-regulated. The coordinated effects observed on many transcripts coding for enzymes of energy pathways may suggest disruption of nutrient metabolism by MeHg. Many transcripts for genes coding for enzymes in the synthetic pathways of sulphur containing amino acids were also up-regulated, suggesting adaptive responses to MeHg toxicity. By this toxicogenomics approach, we were also able to identify many potential biomarker candidate genes for monitoring environmental MeHg pollution. These results based on changes on transcript levels, however, need to be confirmed by other methods such as proteomics.

G. Knutsen, M. Amundsen, R. Pettersen Is annual metabolic cycling in the unicellular microalgae *Chlorella* and *Isochrysis* coupled to the annual earth gravity cycle? *Astronomical and Astrophysical Transactions (AApTr)*, 2012, Vol. 27, Issue 4, pp. 607-618.

Artikkelen har en interessant historie, Gjert Knutsen skriver:

«Rune (1971) og Monica (1998) er begge hovedfagsstudenter jeg har hatt og arbeidet er basert på resultater fra hovedoppgavene deres! Arbeidet med artikkelen har tatt lang tid ikke minst for å finne mulige forklaringer/mekanismer hvordan en slik ytre langsomt forandrende S og svak kraft kan påvirke noe så smått som algene. Det var fra romforsknings-relatert litteratur jeg fant mulige forklaringer gjennom artikler av Mesland, Prigogine, Kondepudi og Albrecht-Buehler. Dette syntes jeg var spennende greier, og som løftet arbeidet ut over det mer trivielle. Disse relasjonene finnes i Discussion.

Prigigone, som jeg referer til, vant Nobelprisen i kjemi i 1977.

Jeg har brukt 12-15 år på å få dette publisert i biologiske tidsskrifter, men uten hell. Responsen har vært omtrent slik: Interesting but we do not believe it.

Derfor var det svært oppmuntrende at manuskriptet ble med en gang akseptert i AApTr.

Fra Discussion er jeg så fri å sitere:

The presence in our cells of an annual rhythm which is not at all coupled to daylight, is fundamentally important and deserves further research. The fundamentally different explanation we here offer, namely that the rhythm can be caused by the annual gravity cycle, is based on published theories on how single cells can register subtle changes in gravity and respond to them. To our knowledge our results are the first experimental work that points to the possibility that cells may be influenced by the annual cycle of earth gravity. This gravity dependency will have wide implications about the understanding of the life of micro algae, with respect to their cell biology, physiology and ecology. Annual fluctuations in growth capacity can have practical implications for algal utilization like commercial algal biomass production, whether it will be for aquaculture feed, energy biomass or for production of bioactive substances and fine chemicals. However our findings may point to the existence of a universal coupling of the annual gravity cycling to all organisms, since the mechanisms of gravity detection and response systems described above are based on general cellular properties.

Dette ble litt lenger enn jeg tenkte, men det var jo kjekt å få eksponere utholdenheten.

Vennlig hilsen, Gjert".