

Innhold (klikk på sidetallet, så kommer du dit direkte ...)

<b>Denne ukas viktigste</b>	<b>2</b>
<i>Viktige tidsfrister</i> .....	2
<b>Essentials in English</b>	<b>2</b>
<i>Exciting findings on the mid-Atlantic Ridge</i> .....	2
<i>Salmon lice problems hurt wild fish populations first</i> .....	2
<i>New support for start-ups</i> .....	2
<i>The new deadline is 12:00 noon!</i> .....	2
<b>Siste nytt fra BIO</b>	<b>3</b>
<i>Rapport fra utdannings- og forskningskonglomerat nr 5</i> .....	3
<i>Frank Nilsen: Villfisken vil bli rammet først</i> .....	3
<i>Jarl Giske &amp; Per Jakobsen: Evolusjon - et fag om alt!</i> .....	3
<i>Forskning.no: Bakteriefunn opnar nytt forskingsfelt</i> .....	3
<i>STIM invites all masters and PhD students to a WINTER TRIP</i> .....	3
<b>Siste nytt fra verden rundt oss</b>	<b>4</b>
<i>Nyskapingsparken Inkubator</i> .....	4
<i>Trangere over Danmarks plass</i> .....	4
<i>Bybanen</i> .....	4
<i>Ledige stillinger</i> .....	4
<i>VilVite</i> .....	4
<i>Winter Vacation at Bergen Museum</i> .....	5
<i>Invitation researchers about participating in Bergen Museum's Fish Day</i> .....	5
<b>Ukens bilde: flytting</b>	<b>5</b>
<b>Forskning: utlysninger, nye satsinger og prosjekter</b>	<b>5</b>
<i>NFR: Utlysning av nærings-PhD stipend for bedrifter med ansatte som vil ta doktorgrad i teknologiske fag (BIA)</i> .....	5
<i>NFR: Nytt leveringstidspunkt for søknader i 2008: 12:00</i> .....	5
<i>Help with applications – think ahead!</i> .....	5
<i>En god dag for klima- og energiforskning</i> .....	6
<b>Info fra studieseksjonen</b>	<b>6</b>
<i>Pliktarbeid for stipendiater og postdoktorer - hvem fikk jeg egentlig tildelt?</i> .....	6
<b>Ny medarbeider</b>	<b>6</b>
<i>Sølvi Espeland</i> .....	6
<b>Gjesteforelesninger, seminarer og kollokvier</b>	<b>6</b>
<i>Bergen Summer Research School (BSRS): Global Development Challenges</i> .....	6
<i>Hva kan "vi" bidra med for å øke rekrutteringen til våre studier?</i> .....	6
<i>7th International Flatfish Symposium</i> .....	7
<i>(29th)-International Conference on Science &amp; Technology</i> .....	7
<i>Programkonferansen HAVBRUK 2008</i> .....	7
<i>COINS 2008 - Studentkonferanse i Vilnius</i> .....	7
<i>Marine Plankton: From Cells to Ecosystems - A celebration of the scientific career of Patrick M. Holligan</i> .....	7
<b>Nye artikler</b>	<b>7</b>
<i>Håkon Dahle, Frøydis Garshol, Marit Madsen &amp; Nils-Kåre Birkeland: mikrobiell samfunnsstruktur i produsert vann</i> .....	7
<i>Lawrence Kirkendall: nytt opphav til symbiose mellom sopp og barkebille</i> .....	8
<i>Aino Hosia: planktoniske nesledyr over den midt-atlantiske rygg</i> .....	8
<i>Aino Hosia: makrozooplankton over den midt-atlantiske rygg</i> .....	8
<i>Tom Sørnes &amp; Aino Hosia: geleplankton over den midt-atlantiske rygg</i> .....	9

Postadresse:	Besøksadresse:	Telefon:	E-post:	Jarl Giske:
Postboks 7803	Bioblokken, 3. etg.	+47 55 58 44 00	post@bio.uib.no	Tlf 84403
N-5020 Bergen	Høyteknologisenteret	Telefaks:	Internett:	Mob 9920 5975
Norge	i Bergen.	+47 55 58 44 50	http://www.bio.uib.no	
	Thormøhlensgate 55			

<i>Anders Opdal &amp; Øyvind Fiksen: lydreflekterende lag over den midt-atlantiske rygg</i> .....	9
<i>Mikko Heino: dyp-pelagiske fisker over den midt-atlantiske rygg</i> .....	10
<i>Anders Fernö: utbredelse og fødeøkologi til delfiner over den midt-atlantiske rygg</i> .....	10

## 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](mailto:post@bio.uib.no) 1 uke i forveien** (gjelder ikke mindre bevilgninger som legater og fonds)

25. feb	FP7 Cooperation / Environment	25. mars	FP7 People / MC – Industry-Academia
26. feb	FP7 Cooperation / Food, Agr. Fisheries & Biotech	28. mars	FP7 People / MC – International Staff Exchange
26. feb	FP7 Cooperation / Energy	8. apr	FP7 Cooperation / ICT
28. feb	ERC / Adv. Investigator Grants (phy. sci & engineering)	11. apr	FP7 Capacities / SMEs
29. feb	FP7 Capacities / Research Infrastructure	16. apr	NFR nærings-PhD
29. feb	ERASMUS Curriculum Development	22. apr	ERC / Adv. Investigator Grants (life sci)
1. mars	NORDPLUS Curriculum Development		
6. mars	FP7 Cooperation / nano		

\*\*check [BIO-web](#) and [UiB's Department of Research Management](#) for more information

## Essentials in English

### *Exciting findings on the mid-Atlantic Ridge*

There are six articles involving researchers from BIO in the recently published thematic issue of Deep Sea Research II: Topical Studies in Oceanography (55:1-2). **Aino Hosia** is an author on three of the papers, other BIO authors represented in the 22 papers include **Anders Frugård Opdal, Øyvind Fiksen, Tom Sørnes, Anders Fernö** and **Mikko Heino**. The papers describe material and data gathered during [MAR-ECO](#) expeditions during the period 2003-2005. Researchers from Bergen Museum are also represented through **Ingvar Byrkjedal**. Details of the articles are in the list at the end of BIOInfo.

### *Salmon lice problems hurt wild fish populations first*

Frank Nilsen is currently testing salmon lice samples to determine if current populations have developed resistance to the oral treatment, 'Slice', currently in use in fish farms. There have been a couple of cases in Trøndelag where it seems as though this may be the case, but Nilsen cautions that more research is needed to be certain of the cause of the seeming resistance. His comments were reported in a Norwegian Newspaper ([kyst.no](#))

### *New support for start-ups*

There is a new support agency for newly starting businesses coming for the higher education / research milieu in Bergen. The first call for participation is 15 February 2008. [Read more.](#)

### *The new deadline is 12:00 noon!*

The Research Council of Norway has a set new time deadline for applications beginning in 2008. All applications must be delivered by 12:00 on the deadline day. There are 6 such dates in 2008: 13.02, 16.04, 4.06, 3.09, 15.10 and 26.11.

Delays are only possible in extremity (for example health problems). Remember that it is the applicants responsibility that the application arrive on time. It is possible to revise submitted applications up to the application deadline. [Read more.](#)

## Siste nytt fra BIO



Hilsen Jarl Giske

### Rapport fra utdannings- og forskningskonglomerat nr 5

Dersom Stjernø-utvalgets forslag om et fåtall institusjoner vedtas, og dersom det skal være geografi som er retningsgivende for inndelingen, så blir Bergen trolig kjernen i Norges femte F&U-konglomerat målt fra Svinesund. Lærerutdanning og sykepleierutdanning vil tallmessig dominere alle steder. Hvor stor forskjell er det egentlig på behovet for høyt utdannede folk i Agder og her vest? Jeg tror disse konglomeratene vil bli så like faglig sett at man kan spørre hvorfor det skal være 8-9 separate ledelser for så overlappende formål. Vi har jo bare ett vinmonopol selv om det er utsalg i alle landsdeler og med geografiske variasjoner i sortiment.

### Spennende resultater fra den midt-atlantiske rygg

Det er 6 artikler med BIO-deltakelse i temaheftet om den midt-atlantiske rygg i tidsskriftet *Deep Sea Research Part II: Topical Studies in Oceanography* som nettopp er utkommet (55:1-2). Du finner heftet [her](#). **Aino Hosia** er med på tre arbeider, og dessuten er **Anders Frugård Opdal**, **Øyvind Fiksen**, **Tom Sørnes**, **Anders Fernö** og **Mikko Heino** blant forfatterne av de i alt 22 artiklene fra [MAR-ECO-ekspedisjonene](#) i 2003-2005. Bergen museum er også representert ved **Ingvar Byrkjedal**. Se titler og abstract lenger bak.



### Frank Nilsen: Villfisken vil bli rammet først

- Om man får problemer med lakselusmidlene, er det villfisken som vil bli rammet først. Det sier professor **Frank Nilsen** ved Universitetet i Bergen. Nå har han lus inne for testing for å avgjøre om det virkelig er en resistensutvikling mot det orale lakselusmiddelet Slice man har sett et par eksempler av i Trøndelag, eller om det er andre forklaringer på at behandlingen i anleggene ikke var som forventet. Les mer på [kyst.no](#)

### Jarl Giske & Per Jakobsen: Evolusjon - et fag om alt!

Professorene **Jarl Giske** og **Per Jakobsen** forsker på evolusjon på Universitetet i Bergen. De har nylig gitt ut andre utgave av sin egenskrevne lærebok i faget, bare syv år etter at den første kom ut. - Faget er i voldsom utvikling. Vi vet så mye mer om livets opprinnelse og kompleksiteten i organismene, og kan sette inn denne informasjonen i en helhet på en annen måte enn før. I evolusjonen stiller vi spørsmål om hvorfor, ikke bare hvordan. Dermed blir det en teori som er samlende og berører veldig mange fagfelt både innen biologien og humanistiske fag, sier Jakobsen. Les mer på [nrk.no](#) og hør innslaget i Naturens verden [her](#).

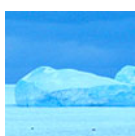
### Forskning.no: Bakteriefunn opnar nytt forskingsfelt

*Dette oppslaget illustrerer hva som skjer med de fleste saker som kommer På Høyden. De finner fort veien til forskning.no. Desto viktigere å eksponere gode saker for På Høyden.*

Artikkel med **Tajul Islam**, **Laila Reigstad**, **Øivind Larsen** og **Nils-Kåre Birkeland**. "UiB-forskarar har identifisert ein ny bakterie som nyttar metan som einaste kjelde til energi og karbon. Det interessante er at bakterien høyrer til på ei heilt anna grein i utviklingstreet enn dei tidlegare kjende metan-etande bakteriane." Les mer på [forskning.no](#)

### STIM invites all masters and PhD students to a WINTER TRIP

8-10 Feb. in Kvamskogen (Friday – Sunday) 150NOK including transportation, accommodation and shared meals. For more information contact [Kirsten Redmond](#).



### BIO research in the Antarctic!

The G.O.Sars is half-way through its southern hemisphere adventure. Follow along with the cruise on the [IMR web site!](#)

## Siste nytt fra verden rundt oss

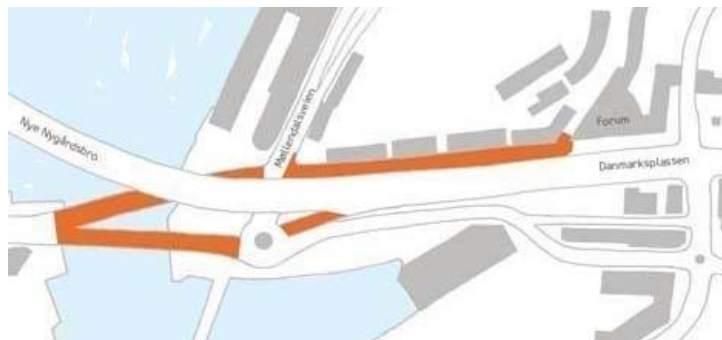
### Nyskapingsparken Inkubator

Nyskapingsparken Inkubator er en nyetablert inkubator som har som formål å være fødselshjelp for nystartede bedrifter fra utdannings- og forskningsmiljøene i Bergen. Både ansatte/forskere og nyutdannede kan søke om opptak. Søknadsfrist for første ordinære opptak til Nyskapingsparken Inkubator er **15. februar 2008**. Les mer om søkekriterier og opptaket på:

[http://www.ncesubsea.no/no/siste\\_nytt/nyskapingsparken-inkubator/](http://www.ncesubsea.no/no/siste_nytt/nyskapingsparken-inkubator/)

### Trangere over Danmarks plass

Nordgående trafikk mister ett kjørefelt når Fjøsangerveien innsnevres over Danmarks plass lørdag. Les mer i [bt.no](#)



### Bybanen

[Find out the latest](#) about Bergen's new collective transport system.



### MAR-ECO's exhibition opened in Oslo

"Deeper than Light" continues its international tour. It left Essen, Germany in December and has travelled to the Maritime Museum in Oslo. The exhibition was [opened in Oslo by the state secretary Vidar Ulriksen](#). [Read more](#).



### Ledige stillinger

Sjekk oversikten på [jobbnor!](#)

Søknadsfrist	Stilling
08.02	<b>BIO/Senter for geobiologi: <a href="#">Avdelingsingeniør</a></b>
08.02	NINA Trondheim: <a href="#">PhD Position in biostatistics and ecological modelling</a>
08.02	Queen's University Belfast, Northern Ireland: <a href="#">Two lectureships in Marine Biology</a>
10.02	Molekylærbiologisk institutt: <a href="#">Stipendiat i molekylærbiologi</a>
10.02	<a href="#">Lecturer/Senior Lecturer in Marine Animal Biology</a> , University of Sydney
14.02	Division of Marine and Atmospheric Research, Australia: <a href="#">research scientists, group leaders</a>
15.02	Institutt for biomedisin: <a href="#">Postdoktor</a>
15.02	Institutt for biomedisin: <a href="#">Stipendia i molekylær nevrovitenskap</a>
15.02	Institutt for indremedisin: <a href="#">Stipendiat innan mat, ernæring og helse</a>
20.02	masters and PhDs funded ( <a href="#">Irish postgraduate FUNDING scheme</a> )
snarest	NIVA: <a href="#">Post-Doctoral position in freshwater cyanobacterial ecology and genetics</a>
25.02	<a href="#">Associate senior lecturer in Systematic Botany and Biodiversity</a> , University of Göteborg
29.02	University of Auckland, NZ: <a href="#">Postdoctoral Research Fellow in Ecological Statistics</a>
29.02	<a href="#">Information Manager</a> , Laboratoire d'Océanographie de Villefranche
29.02	<a href="#">Project Manager</a> , Laboratoire d'Océanographie de Villefranche
01.03	University of Connecticut: <a href="#">3 Post-Docs</a> in Coastal Ecosystems and Human Health
15.04	<a href="#">three-month fellowships</a> for scientists, technicians, PhDs and Post Doctoral Fellows

### VilVite

PopVit er en populærvitenskapelig forelesningsserie på VILVITE. Et par søndager i måneden vil vi i samarbeid med fag- og forskermiljø i inn og utland presentere nye forskningsresultater og dagsaktuelle problemstillinger innen naturvitenskap og teknologi. Passer godt for deg som er fra ca 10 år og oppover. [Se på kalender](#)





## Winter Vacation at Bergen Museum

There are 2 fun things to do at BERGEN MUSEUM during Bergen's Winter Vacation 18-24 February: 20.02 NIGHT AT THE MUSEUM, 19-24.02 solve a museum puzzle. [Learn more.](#)



## Invitation researchers about participating in Bergen Museum's Fish Day

8 June, [Bergen Museum](#) will hold a day-long special event highlighting Fish. The event will build on last year's positive experience with [Bird Day](#).

Researchers and interested students from BIO are invited to come with ideas about possible participation in the event. It will involve stands, demonstrations, activities, "ask an expert" and more ... Please contact [Elinor Bartle](#) for more information or to volunteer to participate.

## Ukens bilde: flytting

**Title:** Samlokalisering / ombygging / utvikling / utfordring - Celebrating togetherness!

**Description:** Although not entirely obvious from the picture, 'ukens bilder' this week highlights the hard work and practical details that are behind assembling and moving a relatively large research group. Through November, December and January members of the "Developmental Biology of Fishes" have been moving offices and labs to a common location 3rd fl. HIB. It is the first time the majority of this group have had a common workplace. Bjørn Sveinbø is pictured here organising and filling the shelves he and Ann-Elise Olderbakk Jordal assembled in the HIB hallway.



**Ukens bilde:** You are invited to submit photos (electronically!) for a "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 Ukensbildekomiteen c/o Elinor Bartle (preferable format jpg, gif; size around 300px sq; saved for web - under 60kb).

## Forskning: utlysninger, nye satsinger og prosjekter

### NFR: Utlysning av nærings-PhD stipend for bedrifter med ansatte som vil ta doktorgrad i teknologiske fag (BIA)

En ordning for nærings-PhD vil starte opp i 2009, en slik ordning er begrunnet i behovet for å sikre forskerrekutteringen til næringslivet. I dialog med Nærings- og handelsdepartementet og Kunnskapsdepartementet er det besluttet å etablere en prøveordning innenfor rammen av BIA allerede i 2008. Søknadsfrist: 16.04.2008 Dette kan være meget relevant for forskningsgrupper ved BIO som samarbeider med industri/næringsliv! [Les mer](#)

### NFR: Nytt leveringstidspunkt for søknader i 2008: 12:00



Søknadsfristtidspunktet er endret til kl 12.00 fra og med første søknadsfrist i 2008.

For 2008 har Forskningsrådet følgende søknadsfrister: 13.02, 16.04, 4.06, 3.09, 15.10 og 26.11, - alle dager kl 12.00. Vi ber søkerne spesielt legge merke til søknadsfristtidspunktet, som er nytt fra og med 2008. Det er kun force majeure (f. eks. sykdom) som vil være grunn for å tillate søkere å sende inn etter fristen.

Samtidig minner vi om at det er søkerens ansvar at søknaden sendes inn i tide. Det er mulig å sende inn en søknad, for så å gjøre endringer på den, og sende den inn på nytt. Vi oppfordrer derfor alle til å sende inn søknaden i god tid.

[Les mer om leveringstidspunkt for søknader i 2008](#)

### Help with applications – think ahead!

The next big set of EU FP7 deadlines is approaching (Feb 25-29). For applications ready in advance, UiB / BIO can provide some support. Simone Heinz at UiB's Research Management deal's with applications from MatNat. Kari Eeg can help with budget information. Elinor Bartle can help with English questions.



## En god dag for klima- og energiforskning

- Dette er en svært god dag for norsk klima- og energiforskning, sier administrerende direktør Arvid Hallén i Norges Forskningsråd, i en kommentar til klimaforliket på Stortinget.

[Les mer](#)

## Info fra studieseksjonen

### Pliktarbeid for stipendiater og postdoktorer - hvem fikk jeg egentlig tildelt?

Før undervisningsåret 2007/2208 startet ble det gjort en fordeling av ressursene knyttet til stipendiater og postdoktors pliktarbeid. Fordelingen ble gjort etter kriterier vedtatt i Hovedprogramstyret, og de som fikk stipendiat / postdoktor tildelt på sitt emne, fikk en e-post om dette med kopi til den kandidat som var tildelt. Fordelingen ble gjort for hele studieåret. Nå er det kanskje sånn at ikke alle husker om de har fått tildelt stipendiat/postdoktor eller hvem det er. I andre tilfeller kan det ha skjedd endringer som gjør at behovet ikke er der lenger eller at stipendiaten /postdoktoren har måttet legge ut på reise etc. som gjør at vedkommende er forhindret fra å delta. Hvis du ønsker informasjon om tildelingen, hvem du har fått tildelt, eller ønsker å melde inn endringer kontakt [eli.hoie@bio.uib.no](mailto:eli.hoie@bio.uib.no). Husk: Den enkelte emneansvarlige / forskergruppe kan ikke tildele pliktarbeid, all underisning knyttet til pliktarbeid må klareres med studieseksjonen.

## Ny medarbeider

**Sølvi Espeland** (not Espedal, as we wrote last week) started her 3 yr Ph.D. in September 2007 at the research group Applied and Industrial Biology under the supervision of **Ole Brix** and **Heidrun Wergeland**. She did her bachelor at the University of the Faroe Islands and finished the master in Cellular- and Developmental Biology at UiB in 2006. Her Ph.D.-project is a part of the NFR-project "Hemoglobin polymorphism in Atlantic cod – finally unraveling the old puzzle". Her main focus will be to test if the hemoglobin expression pattern varies with temperature and oxygen availability, and to measure active metabolic rates of cods by tunnel respirometry; again with special reference to environmental oxygen and temperature. This information will be very useful for selecting breeding fish for cod farming at specific environmental conditions.



## Gjesteforelesninger, seminarer og kollokvier

### Bergen Summer Research School (BSRS): Global Development Challenges

*BIO bidrar til årets Sommerskole om fattigdom og neste år blir temaet klima.*

The first edition of the Bergen Summer Research School on Global Development Challenges, is to be held in Bergen, 7-17 August, 2008.

The theme for 2008 is *Global Poverty* understood as a global challenge, affecting advanced, developing and less developed economies. Our program offers nine different PhD courses and academic as well as social and cultural activities. The city of Bergen is known for its distinctive beauty and charming ambience, which will be the inspirational backdrop to lectures, group work, plenary debates and discussions on Global Poverty. PhD-students and Junior Researchers from the whole world are invited to apply. We think this will be an excellent opportunity to acquire new knowledge and meet with PhD-candidates and experts in an international unique setting.

The Bergen Summer Research School is a joint venture under the leadership of the University of Bergen, with the Norwegian School of Economics and Business Administration (NHH), the Christian Michelsen Institute on Human Rights and Development (CMI), the Bergen University College (HIB) and Unifob.

You will find the application form and more information about the BSRS on our website

[www.gdc.uib.no](http://www.gdc.uib.no). The deadline for submitting the application form is **April 15, 2008**.

### Hva kan "vi" bidra med for å øke rekrutteringen til våre studier?

Fakultetet vil arrangere et seminar med tittelen: "Hva kan "vi" bidra med for å øke rekrutteringen til våre studier?"

Rekruttering av godt kvalifiserte studenter og ansatte er en av fakultetets hovedutfordringer i den nære fremtid. Fakultetsledelsen vil derfor oppfordre flest mulig om å delta på seminaret som arrangeres **26. mars**. Legg merke til tidspunktet 10-12 som skal være undervisningsfritt for de fleste emner på laveregrad. De av dere som likevel har undervisning på dette tidspunktet oppfordres til å flytte/utsette undervisningen i samråd med studentene. Seminaret er i første rekke tenkt for fakultetets ansatte, men studenter i tillitsverv ved institutt og fakultet oppfordres også til å komme. Se følgende internettadresse for mer informasjon: <http://uhu.uib.no/cam/>

Hans Petter Sejrup  
Dekan

Rein Aasland  
Visedekan for utdanning

### **7th International Flatfish Symposium**

Sesimbra, 2-7 November 2008

The symposium will be held in Portugal, Sesimbra from November 2nd to 8th 2008.

More information: [call for abstracts](#) ... [web site](#)

### **(29th)-International Conference on Science & Technology**

JULY 9-10,2009 [learn more](#)

CALL FOR PAPERS send to e-mail: [ari@ontarioeast.net](mailto:ari@ontarioeast.net)

### **Programkonferansen HAVBRUK 2008**

HAVBRUK 2008 blir årets viktigste møteplass og arena for formidling av resultater fra ny norsk havbruksforskning. Konferansen finner sted i Tromsø 7. - 9. april 2008 og arrangeres av Havbruksprogrammet i samarbeid med Fiskeri- og havbruksnæringens forskningsfond (FHF) og Frisk Fisk.

[Les mer](#)

### **COINS 2008 - Studentkonferanse i Vilnius**

11.-15. mars. Opphold, mat og hele pakka koster 25 euro (såvidt jeg vet). Deadline for påmelding er 18. februar. "The [COINS 2008](#) is not only a conference. It is a challenge to dig deeper, seek wider and reach higher." [Learn more](#)

### **Marine Plankton: From Cells to Ecosystems - A celebration of the scientific career of Patrick M. Holligan**

3 April 2008 in Plymouth. Early registration deadline 1 Feb 2008. [Learn more](#)

## **Nye artikler**

### **Håkon Dahle, Frøydis Garshol, Marit Madsen & Nils-Kåre Birkeland: mikrobiell samfunnsstruktur i produsert vann**

Dahle H, Garshol F, Madsen M, Birkeland NK 2008. Microbial community structure analysis of produced water from a high-temperature North Sea oil-field. ANTONIE VAN LEEUWENHOEK INTERNATIONAL JOURNAL OF GENERAL AND MOLECULAR MICROBIOLOGY 93: 37-49

**Abstract:** Molecular and culture-based methods were used to investigate the microbial diversity in produced water obtained from the high-temperature Troll oil formation in the North Sea. 16S rRNA gene libraries were generated from total community DNA, using universal archaeal or bacterial oligonucleotide primer sets. Sequence analysis of 88 clones in the bacterial library indicated that they originated from members of Firmicutes (48 sequences), Bacteroidetes (17 sequences), delta-Proteobacteria (15 sequences), Spirochaetes (5 sequences), Thermotogales (2 sequences) and gamma-Proteobacteria (1 sequence). Twenty-two sequences in the archaeal library were close relatives to members of the genera Methanococcus (18 sequences), Methanolobus (3 sequences) and Thermococcus (1 sequence). Most of the bacterial sequences shared less than 95% identity with their closest match in GenBank, indicating that the produced water harbours a unique community of novel bacterial species or genera. Members of the thermophilic genera Thermosiphon, Thermotoga, Anaerophaga and Thermovirga were isolated. The Troll formations are not injected with sea water.

Thus, dramatic changes of the in situ conditions have been avoided, and a common source of continuous contamination from injection water can be excluded. However, the majority of the organisms detected in the gene libraries were most closely related to cultivated organisms with optimum temperatures for growth well below the in situ reservoir temperature (70 degrees C), indicating that produced water from the Troll platform harbours a substantial amount of non-indigenous organisms. This was confirmed by the isolation of a number of mesophilic and moderately thermophilic organisms that were unable to grow at reservoir temperature.

### **Lawrence Kirkendall: nytt opphav til symbiose mellom sopp og barkebille**

Hulcr J, M Kolarik & Lawrence R. Kirkendall 2007. A new record of fungus-beetle symbiosis in *Scolytodes* bark beetles (Scolytinae, Curculionidae, Coleoptera). *SYMBIOSIS* 43: 151–159

**Abstract** The most evolutionarily advanced form of symbiosis between wood-decaying fungi and wood-boring beetles (Coleoptera, Curculionidae: Scolytinae and Platypodinae) is the ambrosial habit, or fungus farming. Here we present a discovery of a new origin of the ambrosia symbiosis in *Scolytodes unipunctatus*. Feeding on symbiotic fungi and the spatial organization of the gallery system of *S. unipunctatus* is typical for ambrosia beetles, but not for phylogenetically related phloeophagous species. *S. unipunctatus* is associated with the fungal genera *Raffaelea*, *Graphium*, and *Gondwanamyces*; the association of the latter with scolytines is documented here for the first time. The fungi were identified using morphological characters and 18S, 28S and ITS regions of rDNA. We report four undescribed fungus species.

### **Aino Hosia: planktoniske nesledyr over den midt-atlantiske rygg**

Hosia A, L. Stemmann and M. Youngbluth 2008. Distribution of net-collected planktonic cnidarians along the northern Mid-Atlantic Ridge and their associations with the main water masses. Pp 106-118 in (J.D.M. Gordon, O.A. Bergstad and T. Falkenhaus, eds) Mid-Atlantic Ridge Habitats and Biodiversity. Deep Sea Research Part II: Topical Studies in Oceanography Volume 55.

**Abstract** Planktonic cnidarians and ctenophores were sampled with a multiple opening–closing net (Multinet) as well as a non-quantitative plankton net along the northern Mid-Atlantic Ridge (MAR) between Iceland and the Azores. Sixty-four species or genera of planktonic cnidarians (38 siphonophora, 21 hydromedusae, 5 scyphomedusae) and one genus of ctenophore were collected. Of these, *Leuckartiara adnata* and *Clausophyes laetmata* were new records for the area. Multinet samples collected from depths of 0–100, 100–500, 500–1000, 1000–1500 and 1500–2500 m at 11 stations were compared. Multivariate analysis of the data indicated that species composition and abundance along the ridge varied with the dominant water masses, with changes in the cnidarian zooplankton assemblage observed with regard to geographic location as well as depth. The surface waters of the two northernmost stations characterized by modified North Atlantic Water (MNAW) as well as the three southernmost stations characterized by North Atlantic Central Water (NACW) exhibited relatively high abundances (3284–13,915 individuals·1000 m<sup>-3</sup>) in the upper 100 m. No such peak was evident at the middle stations characterized by Subarctic Intermediate Water (SAIW), where the abundances in the upper three depth strata were consistently lower (57–863 individuals·1000 m<sup>-3</sup>). Across the study area, the lowest abundances were found in the 1500–2500 m stratum (0–56 ind.·1000 m<sup>-3</sup>). The main divergence in the species composition and abundance of planktonic cnidarians was observed at the Subpolar Front (SPF), which marked the boundary for the distribution of many species. The divergence at the SPF was strongest in the upper 500 m but observable down to 1500 m. Profoundly different epipelagic species assemblages were observed in SAIW and NACW on opposite sides of the SPF, with the distribution of several species of calycophoran siphonophores confined to the southern NACW. At mid-water depths, the species composition north of the SPF was possibly influenced by Labrador Sea Water (LSW). The highest diversity of planktonic cnidarians was observed in the surface waters south of the SPF and in the 100–1000 m range north of the SPF.

### **Aino Hosia: makrozooplankton over den midt-atlantiske rygg**

Stemmann L, A. Hosia, M.J. Youngbluth, H. Søiland, M. Picheral and G. Gorsky 2008. Vertical distribution (0–1000 m) of macrozooplankton, estimated using the Underwater Video Profiler, in different hydrographic regimes along the northern portion of the Mid-Atlantic Ridge. Pp 94 105 in (J.D.M. Gordon, O.A. Bergstad and T. Falkenhaus, eds) Mid-Atlantic Ridge Habitats and Biodiversity. Deep Sea Research Part II: Topical Studies in Oceanography Volume 55.



**Abstract** The vertical distribution (0–1000 m depth) of macrozooplankton along the northern portion of the Mid-Atlantic Ridge (59°58N, 25°53W to 41°29N, 28°19W) was investigated during the MAR-ECO program (June and July 2004) using the Underwater Video Profiler (UVP). Twelve relatively large (>1 cm) groups were selected from the recorded images: sarcodines (with two sub-groups), crustaceans (excluding copepods), chaetognaths, ctenophores (with two sub-groups cydippids and lobates), siphonophores, medusae (with three sub-groups *Aeginura grimaldii*, *Aglantha* spp. and all other medusae), appendicularians, and thaliaceans. The numerically dominant groups over the whole area were crustaceans (26%), medusae (20%) and appendicularians (17%). The gelatinous fauna were consistently most numerous at 400–900 m. Appendicularians, ctenophores and *Aeginura grimaldii* occurred mostly below 300 m (maximum concentrations of 75, 58, and 30 individuals  $100\text{ m}^{-3}$ , respectively). Siphonophores, *Aglantha* spp. and the other medusae were more uniformly distributed in the water column (maxima of 42, 42 and 300 individuals  $100\text{ m}^{-3}$ , respectively). The macrozooplankton community below 200 m varied with the spatial distribution of the water masses, suggesting that the Sub-Polar Front restricts the mixing of macrozooplankton communities down to 1000 m depth.

### **Tom Sørnes & Aino Hosia: geleplankton over den midt-atlantiske rygg**

Youngbluth M, T. Sørnes, A. Hosia and L. Stemmann 2008. Vertical distribution and relative abundance of gelatinous zooplankton, in situ observations near the Mid-Atlantic Ridge. Pp 119-125 in (J.D.M. Gordon, O.A. Bergstad and T. Falkenhaus, eds) Mid-Atlantic Ridge Habitats and Biodiversity. Deep Sea Research Part II: Topical Studies in Oceanography Volume 55.

**Abstract** Fourteen dives were conducted with the ROVs *Aglantha* and *Bathysaurus* to depths of 2335 m along the Mid-Atlantic Ridge (42°52'–53°17'N). The most frequently observed gelatinous fauna in order of overall abundance included medusae, ctenophores, siphonophores, appendicularians, and tunicates. All of these animals, except the tunicates, occurred throughout the water column. Their relative abundances differed with depth and location. Identification to species was limited to easily recognized fauna because relatively few gelatinous animals were collected.

Each group of gelatinous zooplankton tended to be most numerous in a region just south of the Charlie-Gibbs Fracture Zone. Medusae (mainly *Aeginura grimaldii*) were the most frequently encountered animals (up to 25 individuals per  $100\text{ m}^3$ ). On a vertical scale their abundance peaked from 550 to 800 m and these maxima were consistently within the SAIW and NACWe. In the NACW their densities were notably lower (up to 2 individuals per  $100\text{ m}^3$ ) and the majority of the population was deeper, ranging from 800 to 1050 m. Ctenophores (mainly *Bathocyroe fosteri*) were most prominent (as many as 27 individuals per  $100\text{ m}^3$ ) in a zone from 300 to 600 m in the NACWe. Appendicularians (primarily oikopleurids) had a broader vertical distribution in all water masses, mainly from 450 to 1000 m. Up to 12 houses per  $100\text{ m}^3$  were noted in the NACWe, and these estimates are considered to be very conservative. Sorties near the sea floor (as deep as 2100 m) indicated these detritivores were a prominent component (up to 5 houses per  $100\text{ m}^3$ ) of the epibenthic macrozooplankton. Siphonophores (mostly calycophorans) reached densities of about 14 colonies per  $100\text{ m}^3$  in the NACWe and occurred mainly from 300 to 600 m, at most locations. Tunicates (salps and doliolids) were patchy in their distribution and infrequently observed. Salps were numerous (up to 3 solitary individuals per  $100\text{ m}^3$ ) at only one location (sta. 50) near the surface. Deep-living doliolids (up to 1 individual per  $100\text{ m}^3$ ) appeared from 400 to 500 m at this site and occasionally within the same depth range at most of the other stations.

### **Anders Opdal & Øyvind Fiksen: lydreflekterende lag over den midt-atlantiske rygg**

Opdal AF, O.R. Godø, O.A. Bergstad and Ø. Fiksen 2008. Distribution, identity, and possible processes sustaining meso- and bathypelagic scattering layers on the northern Mid-Atlantic Ridge. pp 45-58 in (J.D.M. Gordon, O.A. Bergstad and T. Falkenhaus, eds) Mid-Atlantic Ridge Habitats and Biodiversity. Deep Sea Research Part II: Topical Studies in Oceanography Volume 55.

**Abstract** As an element of comprehensive exploratory studies of the poorly known pelagic ecosystem associated with the Mid-Atlantic Ridge, acoustic data collected by R.V. *G.O. Sars* during the MAR-ECO expedition in June–July 2004 were used to describe vertical and geographical distributions of meso- and bathypelagic scattering layers. Scattering layers were observed in the entire study area and

at all depths to 3000 m with a split-beam echosounder using the 18-kHz drop-keel mounted transducer. The spatial variation in density of surface to 1500 m area backscattering strength, and that of individually identifiable vertical layers, is described in relation to bathymetry and large-scale hydrographical features such as the Sub-polar Front. The inhabitants of scattering layers were identified by exploratory midwater trawling. A major pattern was the elevated backscattering associated with waters around the Charlie-Gibbs Fracture Zone (CGFZ) and the associated Sub-polar Front at and south of 52°N. In this section of the Mid-Atlantic Ridge, the interaction between topographical features, circulation and primary production appears to create favorable conditions for many taxa across all trophic levels. By comparison, the density was lower both to the south of the CGFZ towards the Azores and in particular northwards towards Iceland. Along the north–south gradient a peak in near-surface algal biomass was also found near the CGFZ, with lower values further north and south. We hypothesize that fish productivity is bottom-up regulated, i.e., limited by primary production within the ridge-associated system, supplemented by advection of allochthonous material, especially in the south

### **Mikko Heino: dyp-pelagiske fisker over den midt-atlantiske rygg**

Sutton TT, F.M. Porteiro, M. Heino, I. Byrkjedal, G. Langhelle, C.I.H. Anderson, J. Horne, H. Søiland, T. Falkenhaus, O.R. Godø and O.A. Bergstad 2008. Vertical structure, biomass and topographic association of deep-pelagic fishes in relation to a mid-ocean ridge system. Pp 161-184 in (J.D.M. Gordon, O.A. Bergstad and T. Falkenhaus, eds) Mid-Atlantic Ridge Habitats and Biodiversity. Deep Sea Research Part II: Topical Studies in Oceanography Volume 55.

**Abstract** The assemblage structure and vertical distribution of deep-pelagic fishes relative to a mid-ocean ridge system are described from an acoustic and discrete-depth trawling survey conducted as part of the international Census of Marine Life field project MAR-ECO (<http://www.mar-eco.no>). The 36-station, zig-zag survey along the northern Mid-Atlantic Ridge (MAR; Iceland to the Azores) covered the full depth range (0 to >3000 m), from the surface to near the bottom, using a combination of gear types to gain a more comprehensive understanding of the pelagic fauna. Abundance per volume of deep-pelagic fishes was highest in the epipelagic zone and within the benthic boundary layer (BBL; 0–200 m above the seafloor). Minimum fish abundance occurred at depths below 2300 m but above the BBL. Biomass per volume of deep-pelagic fishes over the MAR reached a maximum within the BBL, revealing a previously unknown topographic association of a bathypelagic fish assemblage with a mid-ocean ridge system. With the exception of the BBL, biomass per volume reached a water column maximum in the bathypelagic zone between 1500 and 2300 m. This stands in stark contrast to the general “open-ocean” paradigm that biomass decreases exponentially from the surface downwards. As much of the summit of the MAR extends into this depth layer, a likely explanation for this mid-water maximum is ridge association. Multivariate statistical analyses suggest that the dominant component of deep-pelagic fish biomass over the northern MAR was a wide-ranging bathypelagic assemblage that was remarkably consistent along the length of the ridge from Iceland to the Azores. Integrating these results with those of previous studies in oceanic ecosystems, there appears to be adequate evidence to conclude that special hydrodynamic and biotic features of mid-ocean ridge systems cause changes in the ecological structure of deep-pelagic fish assemblages relative to those at the same depths over abyssal plains. Lacking terrigenous input of allochthonous organic carbon, increased demersal fish diversity and biomass over the MAR relative to the abyssal plains may be maintained by increased bathypelagic food resources. The aggregation of bathypelagic fishes with MAR topographic features was primarily a large adult phenomenon. Considering the immense areal extent of mid-ocean ridge systems globally, this strategy may have significant trophic transfer and reproductive benefits for deep-pelagic fish populations.

### **Anders Fernö: utbredelse og fødeøkologi til delfiner over den midt-atlantiske rygg**

Doksæter L, E. Olsen, L. Nøttestad and A. Fernö 2008. Distribution and feeding ecology of dolphins along the Mid-Atlantic Ridge between Iceland and the Azores. Pp 243-253 in (J.D.M. Gordon, O.A. Bergstad and T. Falkenhaus, eds) Mid-Atlantic Ridge Habitats and Biodiversity. Deep Sea Research Part II: Topical Studies in Oceanography Volume 55.

**Abstract** During Leg 1 of the MAR-ECO expedition on the R.V. *G.O. Sars* in June 2004 four main species of dolphins were observed along the Mid-Atlantic Ridge from Iceland to the Azores: pilot

whale (*Globicephala melas*) ( $n=326$ ), short-beaked common dolphin (*Delphinus delphis*) ( $n=273$ ), white-sided dolphin (*Lagenorhynchus acutus*) ( $n=103$ ), and striped dolphin (*Stenella coeruleoalba*) ( $n=86$ ). Pilot whales and white-sided dolphins were found in cold (5–16 °C) and less-saline (34.6–35.8‰) water masses in the northern part of the study area, whereas common and striped dolphins inhabited warmer (12–22 °C) and more-saline (34.8–36.7‰) waters in the south. Dolphins tended to aggregate in areas of steep slopes, but actual bottom depth appeared to be less important. Based on spatial correlations between dolphin occurrence and candidate prey organisms recorded acoustically and by midwater trawling, mesopelagic fishes and squids were assumed to be important prey items, with *Benthoosema glaciale* probably being the most important prey for pilot whales and white-sided dolphins, while *Lampanyctus macdonaldi*, *Stomias boa ferox* and *Chauliodus sloani* were probably of particular importance for common dolphins. Cephalopods, especially *Gonatus* sp. and *Teuthowenia megalops* were the most likely prey species of pilot whales and striped dolphins, respectively. The difference in physical habitat north and south of the Sub-polar Frontal Zone seemed to have important effects on prey distribution, in turn influencing dolphin distribution