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Denne ukas viktigste

Fleksitid fra 1. oktober for alle ansatte. Hvordan praktiseres det?

Som meldt tidligere i denne uka har alle grupper ansatte ved avstemning vedtatt at de nå ønsker fleksitidsordning. Fagforeningene og UiB har blitt enige om hvordan dette skal praktiseres. Fakultetet har sagt at 1. oktober er starttidspunkt for innføringen for alle instituttene ved fakultetet. Nå kommer informasjonen om hvordan dette skal håndteres. Dokumentene finnes både på [norsk](#) og [engelsk](#). Vi håper dette skal bli en ordning som fungerer greit ved BIO og at det oppfyller de forventninger som har ligget bak avstemningsresultatet.

Hilsen Bjørn Åge

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)

- | | | | |
|-------------|---|------------|--|
| 28. sep | -SYNTHESIS: access to taxonomic Resources in Europe | 16. okt | MAREANO inviterer til brukerkonferanse i Tromsø |
| 30. sep | - COST
- ESF: Thermal adaptations in ectotherms | 17. okt | FP7: Marie Curie: Reintegration Grants |
| 1. okt | - Forskningsrådets BIP og KMB (skissefrist)
- Nordic Marine Academy: Forskerkurs
påmelding frist for NHF's årsmøte 24-26 ok | 17. okt | Nasjonalt informasjonsmøte om forskningsinfrastruktur i FP7 |
| 2. okt | -deadline for abstracts for Ocean Sciences 2008 | 18. okt | Påmeldingsfrist for Forskningsrådets nordområdekonferanse - påmeldingsskjemaet |
| 10. okt | HAVBRUK: BIP | 7. nov | NOSAM s temakonfeansen « Dyphavet – kunnskapsbehov og forskningsmuligheter » |
| 12 (15) okt | Deadline for applications to UiB's Guest Research Programme Send applications to Kjell Trengereid 12.10 | 1-5 des | 4th International Deep-Sea Coral Symposium |
| | | 22-26 juni | 6th International symposium on Fish Endocrinology - invitation |

Siste nytt fra BIO

Bergen museums biologer: varig sløsing med UiBs ressurser?

Tida går, og det er mindre og mindre som tyder på at UiB rekker å gjøre gode beslutninger tidsnok til å hindre en alvorlig sløsing med ressurser i flere tiår framover.

Allerede da planene for fysisk samlokalisering av det nyopprettede Institutt for biologi ble klare i 2004, uttrykte Det matematisk-naturvitenskapelige fakultet og Bergen museum i et felles brev ønske om at biologene ved de to enhetene skulle samles på Marineholmen. Det var den gang litt over 30 stillinger knyttet til biologi ved BM. De faglige argumentene gjaldt ikke bare å komme nære BIOs systematikere, det er likeså viktig å komme i nærheten av bioinformatikerne ved Institutt for informatikk, molekylærbiologene ved Molekylærbiologisk institutt og evolusjonsbiologene ved Sars-senteret. Den moderne systematikken trenger disse tre fagene, og dersom UiBs systematikk skal kunne bli moderne, så

I 2005 ble det bestemt at botanikerne i BM skulle planlegges sammen med BIO i våre nybygg, bortsett fra funksjonene knyttet til herbariet som skulle forbli i Realfagbygget. Siden dette skjedde har Bergen museum knadd sine arealbehov vesentlig, og kommet ned på et svært edruelig estimat på hvor mye areal som må til for å kunne samle UiBs biologi på Marineholmen.

Universitetsledelsen kvier seg for dette, fordi det vil komme store leiekostnader på dette arealet. Bedriftsøkonomisk sett vil UiB kunne få dårligere økonomi framover dersom også de zoologiske systematikerne ved BM skal komme ned til oss andre.

Men det er her UiBs økonomer ikke regner rett. Lønnskostnadene er nemlig langt større enn arealkostnadene. Den ekstra kostnaden ved å flytte resten av BM til Marineholmen vil betale seg ved den økte faglige kvaliteten denne flyttingen vil føre til (– både ved BM og ved BIO, MBI, II og Sars). Det handler om hvem som vil søke seg til de stillingene som de nærmeste årene vil lyses ut, samt arbeidsvilkårene for dem som får jobbene. Da hadde det vært veldig verdifullt å kunne påberope seg muligheten for daglig omgang med informatikere, molekylærbiologer og Sars-senteret. Da ville vi også vise at også denne delen av UiBs faglige virksomhet faller inn under ambisjonene om forskningsuniversitetet. Og dette er veldig viktig for BIO, ettersom vi snakker om den viktigste og mest grunnleggende fagdisiplinen i biologifaget.

MENTOR etablert, felles ESF-prosjekt planlegges

På et møte på en båt ved Seinens bredd i Paris onsdag denne uka ble forskerutdannings samarbeidet MENTOR etablert. (Se [BIO-INFO nr 9](#) i år.) De ledende marine utdannings- og forskningsinstitusjoner i Brest, Bremen/Bremerhaven, Kiel, Southampton og Bergen utvekslet onsdag signerte protokoller som fastsetter at samarbeidet er i gang. Dagen før hadde MENTOR-forskere sendt de første søknaden om støtte til EU. Den var rettet til Marie Curie Initial Training Networks og heter Calcification by Marine Organisms. **CalmarO** var en av 197 av totalt 905 søknader som gikk videre til 2. evalueringsrunde. Koordinator er IFM-GEOMAR i Kiel. Så vi er i gang.

På møtet ble deltakerne enige om å forsøke å få sendt av gårde en søknad til ESF (European Science Foundation) innen nettverksamarbeid før oktober er omme. Arbeidstittlen er **Global change and ocean interactions**, og Bergen (**Beatriz Baliño**) skal være koordinator. Aktivitetene skal være forsker- og student-utveksling og sommerskoler, og de tre faglige temaene er

- biodiversity (Allan Cembella, AWI, Bremerhaven)
- bio-geo-chemical cycles (Richard Sanders, Southampton)
- ecosystem end to end [dvs fra nederste til øverste nivå] (??, Bergen)

Det er sterkt ønskelig at forskere fra Bergen er deltakere i alle disse tre temaene. Vi vil så snart som mulig gå ut med et dokument som må forbedres ved iterasjon i løpet av de neste 3 ukene.

Global Change innbefatter klimaendringer så vel som andre typer av antropogent påtrykk (økt menneskelig aktivitet, tilstedeværelse, utslipp, fangst). Jeg tar gjerne imot innspill fra forskere som vil bidra til å sette sitt preg på søknaden vi skal sende.

Ellers kan nevnes fra møtet at deltakerne ikke ønsket medlemsavgifter for å finansiere MENTOR. Hver deltaker har forpliktet seg på å stille både labor og undervisning gratis til disposisjon for tilreisende PhD-studenter og forskere fra MENTOR-samarbeidet. Southampton har allerede besluttet å finansiere 2-3 reiser for opphold av 2-3 måneders varighet ved andre MENTOR-byer neste år, og

også tilsvarende for folk som vil reise til Southampton. Trolig vil også de andre byene forsøke å få til liknende tilbud.

Disse institusjonene er med i MENTOR her i byen: UiB, HI, NIFES, CMR og NHH.



Fleksitid

Vi står altså nå foran innføring av fleksitid. Dette har både forskerne og administrativt/teknisk personale ved vårt fakultet ønsket seg. Det er slett ikke instituttledelsens ønske, men det blir vår jobb å gjennomføre den. De som ikke har gidde å stemme, samt de som ikke trodde at det skulle få konsekvenser, kan nå ikke klage over at ordningen innføres. Og ingen kan klage på BIOs administrasjon, for den er i alle fall helt uskyldig. Jeg håper bare at det ikke vil koste oss en stilling å administrere ordningen.

Hilsen Jarl Giske

Ian Mayer: breakthrough empirical test of evolutionary hypotheses of sexual selection

Observation leads to hypotheses, but then comes the sticky business of experimental tests. Professor **Per Jakobsen** reports that BIO researchers have been recently responsible for making breakthroughs in two cases whereby they developed empirical methods for providing support for these important biological hypotheses.

The first was work published a year ago by a group involving (among others) Head Engineer **Knut Helge Jensen** and Professor **Arne Skorping**. Their work provided empirical support for the trade-off hypothesis for the evolution of virulence in parasite infections. The second, recently published in the journal *American Naturalist*, involved Professor **Ian Mayer** and colleagues at the Max Planck Institute for Evolutionary Biology. Mayer's group was able to implant a capsule that released 11-ketotestosterone, the steroid hormone chiefly responsible for stimulating the development of male secondary sexual characters in fish. Using the stickleback as a model species, they used this method to empirically demonstrate that the Immunocompetence Handicap Hypothesis (ICHH) does indeed provide a functional explanation for how male secondary sexual characters can provide honest signals of male quality in fish, but at the same time results in immunosuppression. This was the first study to demonstrate that the ICHH can apply to teleost fish, and can involve androgens other than testosterone.

The work in both papers is significantly important, not only because it provides the empirical proof for a hypothesis, but also because both results involve research models that can be applied to other interesting and important questions in their respective fields. Indeed the three-spined stickleback is quite an interesting model fish. Several researchers at BIO are currently working with this ubiquitous species, and Mayer was recently co-editor of a book entitled "Biology of the Three-Spined Stickleback", which was published in spring 2007.



Torbjørn Paulsen kommer på Ut i naturen

Stipendiat Torbjørn R. Paulsen har vært med Monika Blikås "Ut i naturen" for å snakke litt om fordeler og ulemper rogn har med å bruke fugler som frøspredere. Innslaget sendes i magasinutgaven **2. oktober kl. 19.30 på NRK1**. Vil du vite mer ligger det programtale på NRK sine nettsider

http://www.nrk.no/kanal/programoversikt/?p_otr_prog_id=PRNA60000607&p_otr_sendedato=20071002&p_otr_anntid=19.30&p_otr_kanal=NRK1&p_knapp=Omtale&p_artikkel_id=0



Knut Krzywinski: Using film to convey knowledge

Bilder og lyd kan fortelle og gi mer kunnskap enn tekst alene, sier **Knut Krzywinski** ved Institutt for biologi. Han valgte å spille på myter og sagn for å øke ungdoms bevissthet om sin europeiske kulturlandskapsarv.

I 2004 fikk Knut Krzywinski 6 millioner kroner av EU for å lede et prosjekt med mål om å få ungdom til å verdsette den landskapsarv som over hele Europa trues av den største landskapsendringen siden istiden. Etter tre års arbeid sammen med syv partnere fra hele Europa, er filmen **Fields of Demeter** klar. Tittelen henspiller på Demeter, fruktbarhetsgudinnen. Filmen distribueres til skoler, museer og kulturinstitusjoner over hele kontinentet. Prøvevisninger tyder på at han ikke bare treffer målgruppen, men folk i alle aldersgrupper.

[Les mer.](#)

Knut Krzywinski coordinates the European Project, "Our Common European Cultural Landscape Heritage". The Project has recently produced a film entitled, "Fields of Demeter". The film highlights the life values of the people for whom European landscape is their homeland. The landscape is not only a physical entity; but has an intellectual content. Memories, myths, and ideas relating to the land are invisible factors. [More information.](#)



Formidling, formidling: Jens Nejtgaard kommer på film

Denne ukas BIO-INFO kommer kanskje litt tidlig i forhold til oppfordringen, men Jens Nejtgaard selv mener at denne linken kunne være noe for enhver

marinbiolog/oceanograf å avslutte fredag ettermiddag på jobb med:

<http://www.youtube.com/watch?v=yjTbPtv88sI>

Særlig viss vi venter på neste coole film, denne gang med Jens og andre UiB folk i "skuddlinjen på Svalbard": <http://www.thedailygreen.com/2007/09/18/oceans-under-threat-fromocean-acidification/6825/> Den kommer dog ikke på YouTube. (Men, apropos fleksitid, så er det ikke tanken at du skal gå hjem når du har sett denne filmen...)



På Høyden i svampelaben på Høyteknologisenteret

I kjelleren på Høyteknologibygget fremprovoserer forskere panikkreaksjoner hos svamp for å se hvor godt de er rustet mot trålskader og oljevirkosomhet.

– Se på den som har kastet kappen og strekker seg på tærne! Snart vil den kanskje også snike seg litt bortover, sier biolog **Hans Tore Rapp** (til høyre), og peker på en liten, men robust svamp i et kar med sediment. Ved siden av er det en grå sak som har vært mindre heldig og som ikke har tålt belastningen.

I Nordens eneste svamplaboratorium prøver de å avsløre svampenes overlevelsesstrategier. Her har de hentet inn 30 arter av de rundt 400 som man kjenner til i norske kystområder. Til tross for at store områder på dypet er dekket med svamp, er det mye man ikke vet om disse organismene som er en viktig del av havets renseanlegg. Les mer [På Høyden ..](#)



Mye biologi i siste Hubro

UiB er nå ute med årets hefte nr 3 av eksterntmagasinet [Hubro](#). Siste hefte er ennå ikke på nett, men papirutgaven er vel verd er besøk. **Gaute Velle** ved Bergen museum intervjues om juks og etikk (han er ikke mistenkt..), **Vigdis Vandvik** og **John Arvid Grytnes** diskuterer føleri i naturforvaltning, **Kari Hjelle** (BM), **Lene Halvorsen**, **Linn Cecilie Karlsen** og **Aage Paus** lufter sin pasjon for pollen, **Per Magnus Jørgensen** (BM) trekker fram botanikeren Martin Vahl (1749-1804) og **Ingunn Thorseth** (Institutt for geovitenskap) intervjues om vårt felles Senter for geobiologi. Dessuten er der en notis sakset fra På Høyden om forskning på leptin hos fisk (Utviklingsbiologi hos fisk) og om mikrober på Mars (Senter for geobiologi).

Øresteiner, HI og BIO i Fiskaren

Dagens Fiskaren ("Kystens næringsavis") har et flersiders oppslag 8s. 13-15) om forskning på aldersbestemmelse av fisk ved hjelp av øresteiner. Et av intervjuobjektene er **Hans Høie**, som er postdoktor med delt finansiering fra BIO og HI. Stykket begynner slik:

Ringar av kunnskap

Året 4948 før Kristus vart det fanga ein kring seks år gammel torsk lengst inne i ein fjordarm nordaust for Bergen. Fisken var mellom fire og seks kilo stor, og hadde vandra innover i fjorden frå saltare sjø ved kysten.

Helge Arild Bolstad (tekst)
Kjartan Mæstad (foto)
Hans Høie (foto)



7000 ÅRGAMAL: Denne otolitten vart funnen under utgravinga av ein steinalderbustad i Hordaland.

vart oppdaga og Skipshelleren graven ut frå 1930-talet, vart det, attåt mangt anna forvitneleg, óg funne fem øyresteinar frå fisk i jordsmonnet. Desse, på fagspråket kalla «otolittane », vart tekne vare på av Universitetet i Bergen, og er fleire gonger seinare blitt analyserte av forskarar som finn ut litt nytt om fisken kvar gong. For med nye metodar kjem fleire svar. Ny teknologisk kunnskap og utstyr er, som kjent, óg årsaka til at forskarar i dag grev opp att beinrestar frå grava på Oseberg. – Det er óg funne otolittar i god stand i avfallshaugar frå klippfisk- og tørrfiskproduksjon på Måsøy i Finnmark, Vanna i Troms og Alstahaug i Nordland. Desse strekkjer seg i tid frå 1400-talet og 300 år framover, og gjev oss i dag innsikt i ei tid då fiskebestandane vart lite skattlagde, fortel Hans Høie. Han er med i ei tverrfagleg analysegruppe med deltakarar frå både Universitetet og Havforskningsinstituttet i Bergen.

Quality Reform in action

BIO has quite a number of exciting new or revised courses. Recently a group of students from BIO300 braved the poor weather conditions to gather material for their field projects. This course involves a collaboration with Bergen Commune and is investigating environmental issues right at our doorstep. Designed by **Karin Pittman**, the course is taught by **Louise Lindblom** ably assisted by **Mia Bengtsson**, **Christiane Todt** and **Paco Cardenas**. The projects will be presented 3 December and the students would welcome an audience!

2 søkere til instituttlederstillingen ved BIO

Det er altså for sent å søke for de som ikke var oppmerksom på muligheten, men stillingen er altså ledig fra kommende årsskifte. De to søkerne er Jarl Giske og [M. Azam Mansoor](#), nå ved Universitetet i Agder. Mansoor har i tillegg søkt instituttlederstillingene ved molekylærbiologisk og kjemisk, så det kan ligge an til en ny runde med instituttsammenslåinger. Instituttrådet ved BIO har vedtatt at **Peter Emil Kaland** og **Ida Helene Steen** skal være instituttets representanter i fakultetets bedømmelseskomite for stillingen.

SAME DAGEN, må ein tru, hamna torsken som mat for det steinalderfolket som held lag under ein diger heller ved Straume i Vaksdal kommune. Funn av reiskap og matrestar syner at folket her levde mykje av sjømat, – attåt hjort og anna vilt. Når forskaren Hans Høie så nøye kan skildre ein torsk og eit måltid ved ein fjord i Hordaland for kring 7000 år sidan, har dette ei einaste årsak: Ein øyrestein frå fisken. Då den gamle buplassen



FORSKAREN: – Den eldste øyresteinen me i Norge har forska på, er kring 7000 år gamal, fortel Hans Høie.



Siste nytt fra verden rundt oss

"Ut i naturen" ønsker mer stoff

Apropos Torbjørn Paulsens kommende radio-formidling: det er stort behov for mange slike innslag! "Ut i Naturen" (NRK) redaksjonen har begynt å planlegge neste års magasinsendinger, og har bedt om innspill til enkeltreportasjer eller hele programtema. Det kan være snakk om nye forskningsprosjekt, nye resultater eller gammel kunnskap som ikke er så godt kjent.

I utgangspunktet er alt av interesse, men spesielt aktuelle tema er følgende:

- elva (i elva, ved elva, under elva...)
- regnskogen (og tre/vegetasjon elles)
- isen (som fenomen, som livsgrunnlag, utvikling...)
- fjellet (som energikilde/rekreasjon, sansestimulerende for folk og fe, fargar, lukt...)
- havet (fiske- og dyreliv, tang og tare, bunnvegetasjon...)
- lufta (luftstraumar, værphenomen, fugl og insekt, temperatur...)

Mvh Arve Aksnes

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Tlf. 55588153, Mobil 48026563, Epost: Arve.Aksnes@mnfa.uib.no

New species described by Bergen Museum

Byrkjedal I, Orlov A, A new species of *Cottunculus* (Teleostei: Psychrolutidae) from the Mid Atlantic Ridge. *Zootaxa* 1580: 63–68 (2007) www.mapress.com/zootaxa/

Abstract: *Cottunculus tubulosus* n.sp. is described from one specimen caught in the summer of 2004 in the Northeast Atlantic, at about 2000 m depth in the Mid Atlantic Ridge. The species is characterised by a slender body, a long head, large pointed cranial spines, large bony tubules along the lateral line, prominent dermal prickles along the back, dorsal and anal fins set far posterior, a short caudal peduncle, and no banded colour patterns. From morphological characters, the species seems closely related to the South African species *C. spinosus*. [Read more.](#)

Bentham Science lanserer 200 nye open access tidsskrift

BIO belønner forskningsgruppene for vitenskapelig produksjon, og en del av belønningssystemet er impact-faktoren til tidsskriftet. Når et tidsskrift er så nytt at det ikke har en slik faktor, så settes den til 2,5 i BIOs belønningssystem. Det er litt bedre enn gjennomsnittartikkelen fra BIO. UiB ønsker at vår forskning skal være tilgjengelig for flest mulig gjennom Open Access, så la dette være en oppfordring til å sette seg inn i tilbudet fra Bentham Science Publishers:

Bentham Science Publishers have gained a longstanding international reputation for their excellent standards and top quality science publications. Many journals published by Bentham Science Publishers have received high impact factors in their respective fields. For the current list of publications, please visit www.bentham.org. Seven Nobel Laureates have endorsed a number of Bentham Science's journals; please read their quotes at www.bentham.org/Nobel.htm

The publishers are now undertaking a new publication venture by launching a number of Open Access journals in 2007, devoted to various disciplines in the fields of science and technology. Please refer to Bentham Open's website at <http://www.bentham.org/open/> for a current list of publications.

Open Access Journals are freely accessible via the Internet for immediate worldwide, open access to the full text of articles serving the best interests of the scientific community. All interested readers can read, download, and/or print open access articles at no cost! There is no subscription fee for Open Access journals. The modest open access publication costs are usually covered by the author's institution or research funds. Moreover, authors who publish in our Open Access journals retain the copyright of their article. Open Access journals are no different from traditional subscription-based journals; they undergo the same peer-review and quality control as any other scholarly journal.

The journal aims to provide the most complete and reliable source of information on current developments in the field. The emphasis will be on publishing quality articles rapidly and making them freely available to researchers worldwide. All published articles will be deposited immediately upon publication in at least one widely and internationally recognized open access repository, such as Medline, PubMed Central. Moreover, all articles are indexed by Google and Google Scholar, therefore providing the maximum exposure to the articles.



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Forskning: utlysninger, nye satsinger og prosjekter

Forskerutveksling mellom UiB, Univ of Washington og Memorial Univ of Newfoundland - 2007-2008

Vi viser til tidligere utsendte utlysningstekst for utveksling mellom UiB og University of Washington/ University of Washington for det akademiske året 2007/2008. Opprinnelig søknadsfrist var satt til 1.11.07. På grunn av at det har kommet inn få søknader innen fristens utløp, har utvekslingskomiteen besluttet å forlenge fristen til 9. desember 2007.

Trenger du søknadspapirene på nytt? Kan fås ved å kontakte studieseksjonen.

Ukens bilde

Biodiversity course detects increasing biodiversity!



Figure legend: *Antithamnion nipponicum*

Photographer: Erling Heggøy, September 2007

Description: *Antithamnion nipponicum* is a species of small red algae which, as its name suggests, was introduced to European waters from the Pacific. The alga was detected during a Nordic Marine Academy course at Espegrend, co-ordinated by Kjersti Sjøætun. According to Professor Jan Runes, a specialist from the University of Oslo, this is the first time the species has been found in northern Europe. It is relatively common in the Mediterranean and along the coast of France.

[More information](#)

Ukens bilde: You are invited to submit photos (electronically!) for a "Ukens bilde". Please include a very short description and credit information. (Figure legend / title: Photographer (date): Description:.) 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).

Avsluttende mastergradseksamen

Dirk Steenmans: Environmental economics and sustainable coastal development in China

Dirk Steenmans holder mandag 1. oktober avsluttende presentasjon av sin European Joint Master in Water and Coastal Management.

Tittel på oppgaven: Environmental economics as tool for ICZM and sustainable coastal development: a case study for changes in ecosystems service values due to coastal reclamation in the Sansha Bay, China

Veileder: Rune Rosland. Sensor: David Barton (NIVA)

Sted dog Tid: Mandag 1. oktober 10:00, Bergen Vitensenter, Konferanserom A, 2. etasje

Alle interesserte velkommen!

Kjartan Eduard: reproductive tactics in two spotted goby

Kjartan Eduard holder torsdag 20. september avsluttende presentasjon av sin mastergradsoppgave i Marinbiologi.

Tittel på oppgaven: Size dependent seasonal plasticity in the reproductive tactic of the male two

spotted goby, *Gobiusculus flavescens* (Fabricus).

Veiledere: Anne-Christine Utne Palm og Per Jacobsen.

Sensor: Geir Johnsen (Rådgivende biologer). Bisitter: Glenn Bristow

Sted og tid: Mandag 1. oktober, 10.15, Møterom 329C1, Høyteknologisenteret, bioblokken 3. etasje

Alle interesserte velkommen!

Koenraad Ghys: ecosystems service valuation as management tool for mariculture

Koenraad Ghys holder mandag 1. oktober avsluttende presentasjon av sin European Joint Master i Water and Coastal Management.

Tittel på oppgaven: Potential and constraint of ecosystems service valuation as a management tool to assess mariculture impacts

Veileder: Rune Rosland. Sensor: David Barton (NIVA)

Tid og Sted: mandag 1. oktober 13:00, Bergen Vitensenter, Konferanserom A, 2. etasje

Alle interesserte velkommen!

Info fra studieseksjonen

Lærer- og ansatt-mobilitet gjennom Erasmusprogrammet

UiB har fått midler til mobilitet for studieåret 2007/2008 gjennom Erasmus gjennom Lifelong Learning Programme (LLP). Det er satt av midler til 10 lærermobilitet og 10 tilsattmobilitet. For begge typer mobilitet vil stipendiet utgjøre ca. 800 euro pr. uke (mindre dersom oppholdet strekker seg over flere uker). Mobilitet bør være gjensidig over ett visst tidsrom, slik at de som søker om utreisende mobilitet må legge til rette for tilsvarende innreisende mobilitet på sin avdeling/fagmiljø.

Lærermobilitet: Utveksling av faglig tilsatte som skal undervise ved partnerinstitusjon der oppholdet skal være en integrert del av undervisningsopplegget ved verstinstitusjonen.

Tilsattmobilitet: Utveksling av faglig eller andre tilsatte med tanke på forskjellig type kunnskapsoverføring (deltagelse på workshop, seminarer, utplassering på arbeidsplass, deltakelse på språkkurs og faglige konferanser). Mer informasjon om utvekslingen og søknadsprosedyre kan fås ved henvendelse til eli.hoie@bio.uib.no.

Gjesteforelesninger, seminarer og kollokvier

Public Outreach at Conferences

Congratulations to [Christa Schleper](#) for suggesting a relatively easy way for organisers of international conferences to extend their impact to schools and the general public. Over 100 students and teachers attended an open lecture at this week's [Thermophiles 2007 International Conference](#). Among the many fascinating details shared by guest lecturer Frank Robb from the University of Maryland, the students were informed about a breakthrough piece of information that further extends the boundary conditions for life, and which was just announced at the conference that morning: micro-organisms have recently been found who thrive at 121°C – the temperature currently used to sterilise scientific and medical equipment!

The model is one that could easily be applied at any conference. Include an open lecture in the programme (it could even be the opening lecture), followed by an open poster session where the scientists are “on hand” to answer questions about their posters. [Skolelaboratoriet](#) provides a wonderful [information and sign-up service](#) for schools. It is possible, in addition, to notify non-specialists from the university and to use the press to extend the reach to the general public. The teachers attending today's lecture and poster session responded very positively to the initiative and hope that there will be more!



Guest lecture by Thomas Danhorn: *Agrobacterium* biofilm formation

3 October 13:15 Auditorium 101, Jahnebakken 5

AGROBACTERIUM TUMEFACIENS BIOFILM FORMATION: POLAR SURFACE ATTACHMENT AND RESPONSE TO PHOSPHORUS STARVATION [more information](#)

Nye artikler

Ian Mayer: *eksperimentell test av immunkompetansehypotesen*

Kurtz J, M Kalbe, Å Langefors, I Mayer, M Milinski & D Hasselquist 2007. An experimental test of the immunocompetence handicap hypothesis in a teleost fish: 11-ketotestosterone suppresses innate immunity in three-spined sticklebacks. *Am. Nat.* 170: 509-519

ABSTRACT: The immunocompetence handicap hypothesis (ICHH) provides a functional explanation for how sexual ornaments can provide honest signals of male quality. A key aspect of this hypothesis is that testosterone (T) has a bimodal effect: a higher T level enhances the expression of ornaments (increasing mating success and, ultimately, fitness); however, at the same time, it suppresses immune function. Tests of the latter assumption, which have focused mainly on aspects of adaptive immunity in birds, led to equivocal results. We performed a hormone-implant experiment in male three-spined sticklebacks (*Gasterosteus aculeatus*) to test the key assumptions of the ICHH in a fish, where the dominant circulating androgen is 11-ketotestosterone (11kT) rather than T. Males were implanted with 11-ketoandrostenedione, which is a natural precursor of 11kT. Each individual's circulating 11kT level, ornamentation, and immunocompetence were measured 2 weeks later. In addition, we quantified oxidative tissue damage because the ICHH has been hypothesized to work via oxidative stress. We found that the males' 11kT levels correlated positively with ornamentation but negatively with immunocompetence, in particular, measures of innate immunity. Moreover, there was a trend for fish with high 11kT levels to suffer more from oxidative stress. Thus, our data provide support for the ICHH.

Trond Løvdal, Tsuneo Tanaka & Frede Thingstad: *fosfatkonkurransen mellom alger og bakterier*

Løvdal T, T Tanaka & TF Thingstad 2007. Algal-bacterial competition for phosphorus from dissolved DNA, ATP, and orthophosphate in a mesocosm experiment. *LIMNOLOGY AND OCEANOGRAPHY* 52: 1407-1419

Abstract: We measured the turnover of phosphorus (P) from radioactive-labeled dissolved deoxyribonucleic acid (dDNA), adenosine triphosphate (ATP), and orthophosphate, and the partitioning of P from these sources into different size fractions of algae and bacteria in nutrient-manipulated mesocosms. There was a transition from uptake dominated by larger organisms during balanced enrichment toward uptake dominated by smaller organisms during nitrogen (N) enrichment (P starvation). Contrary to expectation, this effect was counteracted by glucose enrichment, probably because bacterial cells increased in size in a glucose-amended mesocosm. During P starvation, estimates of biomass-specific affinity for all substrates were consistent with uptake becoming limited by molecular diffusion transport toward the cells. Dissolved organic phosphorus (DOP) turnover times (T) fell to similar to 5 min for ATP and similar to 1.5 h for dDNA (compared to 1.1 and 15.6 h, respectively, during balanced enrichment), coincided with little inorganic P liberated from DOP in the water, and reflected a tight coupling between hydrolysis and uptake in this situation. At one time during the experiment, the ability of algae and bacteria to compete for P was also assessed by the combination of isotope dilution experiments and affinity estimates. High affinity and low values of the term $K + S_n$ (the half saturation constant + the natural concentration of bioavailable substrate) when the 1 - 0.2- μ m size fraction was compared to the > 1- μ m size fraction for all substrates indicated bacterial supremacy while in competition for both inorganic and organic P. No significant shift in algal-bacterial competition for DOP relative to dissolved inorganic phosphorus (DIP) was found.

Tsuneo Tanaka & Frede Thingstad: *fosfatopptak hos alger og bakterier*

Tanaka T, Henriksen P, Lignell R, Olli K, Seppala J, Tamminen T, Thingstad TF 2006. Specific affinity for phosphate uptake and specific alkaline phosphatase activity as diagnostic tools for

detecting phosphorus-limited phytoplankton and bacteria ESTUARIES AND COASTS 29 (6B): 1226-1241

Abstract: We analyzed responses of soluble reactive phosphorus (SRP), bioavailable phosphate (PO₄), Particulate phosphorus, turnover time of orthophosphate (T-t), and alkaline phosphatase activity (APA) to varying degrees of nutrient stress. The nutrient stress was evoked by different treatments in concentration and combination of inorganic nitrogen (N) and phosphorus (P), and labile organic carbon (glucose) to mesocosms in experiments carried out in eutrophic southern (Odense Fjord, Denmark) and northern (Tvarminne Archipelago, Finland) coastal zones of the Baltic Sea. Despite seasonal and geographical differences, similar responses were observed in both experiments. Low SRP (< 100 nmol I⁻¹), short T-t (< 10 h), and increased levels of APA were observed in both N + P balanced and P deficient treatments, while the opposite trend was observed in P replete treatments. The shortest T-t and the highest APA were found when glucose was combined with N treatment. Bioavailable PO₄ was estimated using T-t and P uptake rates as derived from stoichiometric conversion of carbon based primary and bacterial production. With shorter T-t, the PO₄ pool declined to < 1 nmol-P I⁻¹, whereas the SRP background pool (difference between SRP and PO₄) remained relatively constant (c. 50 nmol I⁻¹). APA was inversely related to PO₄ but not to SRP. Responses of specific APA and specific affinity for PO₄ uptake, which are APA and PO₄ uptake rates (inverse of T-t), respectively, normalized to the summed P biomass of phytoplankton and bacteria, responded consistently to the pattern and magnitude of nutrient limitation evoked in our experiments. Our results, together with a literature survey, suggest that both parameters can be useful in examining PO₄ availability for the natural phytoplankton and bacteria community in P starved aquatic systems.

Kjersti Sjøtun & Tore Høisæter: beiter-kontrollert rekruttering av introdusert alge

Sjøtun K, Eggereide SF, Høisæter T 2007. Grazer-controlled recruitment of the introduced *Sargassum muticum* (Phaeophyceae, Fucales) in northern Europe. MARINE ECOLOGY-PROGRESS SERIES 342: 127-138

Abstract: *Sargassum muticum* (Yendo) Fensholt was introduced to European coasts during the 1970s. We studied survival and growth of seeded *S. muticum* germlings in field experiments on the southwestern coast of Norway, close to its present northernmost limit of distribution in Europe. A cage experiment was conducted twice (using different starting densities of germlings) at 2 localities during the summer and autumn of 2002, each experiment lasting 1 mo. Germling survival was significantly higher within grazer-excluding cages than on unprotected substrate. Germlings within cage controls (cages accessible to mesograzers) experienced intermediate mortality, which was nevertheless closer to that of unprotected than to cage-protected germlings. At a third locality, survival of unprotected germlings was recorded from September 2000 to February 2001, and only 0.6% of the germlings had survived by February. When relating proportion of mortality to initial density of germlings, we found no tendency of positive density-dependent mortality; on the contrary, on the substrate where grazers had access to the germlings, there was a tendency for high mortality when initial density was low and lower mortality when initial density was high. This suggests a 'swamping' effect of high germling densities on grazers. The growth of germlings during autumn and winter was very low compared with earlier reported measurements from Spain, and we suggest that relatively slow growth rates may make the germlings vulnerable to grazing impact. The results indicate that herbivorous grazing on early post-settlement stage germlings may be a limiting factor for the spread of *S. muticum* in southwestern Norway.

Ivar Rønnestad: metoder for markører i fiskelarve-ernæring

Conceicao LEC, Morais S & Rønnestad I 2007. Tracers in fish larvae nutrition: A review of methods and applications. AQUACULTURE 267: 62-75

Abstract: Knowledge on fish larval nutritional requirements is limited and mostly qualitative rather than quantitative information is available. The assessment of these nutritional requirements has been held up due to the small size of the animals, the fact that most species do not grow well on inert microdiets, and difficulties to determine feed intake and digestibility of diets. To overcome such difficulties, tracers have been intensively used in recent years, following intermittent use since the 60's. However, tracer studies have also known limitations and interpretation of results should be done with care. This paper reviews tracer methodologies used in nutritional studies for fish larvae, including

their advantages and limitations, and illustrates with examples of such studies dealing with feed intake, digestion, absorption and utilization of nutrients. A range of tracer methodologies to perform larval nutrition studies is currently available. These may be instrumental to improve the understanding of nutritional physiology of marine fish larvae and their nutritional requirements. Tube feeding of a radiolabeled nutrient (normally C-14-labeled), followed by quantification of the tracer that is present in faeces, retained in tissues and catabolised, after some hours, has been used to assess the digestion/absorption capacity for different amino acids (AA), fatty acids (FA) and lipid classes, as well as their relative utilization for energy production. A method combining the use of live food in which proteins are labeled with a stable isotope and a spectroscopic/ spectrometric technique that allows determination of the isotopic enrichment in individual AAs, can be used to estimate ideal dietary indispensable AA (IAA) profiles. Feed intake can be estimated using either microdiets or live food labeled with radio or stable isotopes, in order to study factors impinging on feed intake regulation, and to improve knowledge on the effect of feed intake in nutritional requirements and digestive physiology. However, results obtained using tracer studies do not necessarily represent the digestive and metabolic performance of an undisturbed larvae feeding ad libitum in a culture system or in the open ocean. Still, when these methods are used in standardized conditions, they can serve as tools to assess and compare performance between treatments and to study ontogenetic changes. It is nonetheless advisable that long term effects be assessed in subsequent validation growth trial-type experiments. Furthermore, tracer studies can be very useful to screen effects and reduce the number of treatments to be tested in growth-trial experiments.

Agurtzane Urtizbera: planktonfordeling i Biscayabukta

Zarauz L, X Irigoien, A Urtizbera & M Gonzalez 2007. Mapping plankton distribution in the Bay of Biscay during three consecutive spring surveys. *Mar Ecol Prog Ser* 345: 27–39

ABSTRACT: Nano-microplankton biomass, mesozooplankton biomass and hydrographic features were measured with mesoscale spatial resolution during 3 surveys in the Bay of Biscay between March and June 2004. Regions of high plankton biomass were associated with mesoscale physical structures. Generalized additive models (GAMs) based upon surface salinity, surface temperature and stratification of the water column explained 83% of the variability in nano-microplankton biomass distributions, 67% for small mesozooplankton, and 41% for large mesozooplankton. The results show that when biological and physical data are collected at the relevant spatial scales, nanomicroplankton and small mesozooplankton biomass distributions can be largely explained using simple hydrographic variables and non-parametric regression models.

James Kennedy & Audrey Geffen: maternale effekter på egg og larver hos flyndre

Kennedy J, AJ Geffen & RDM Nash 2007. Maternal influences on egg and larval characteristics of plaice (*Pleuronectes platessa* L.). *Journal of Sea Research* 58: 65–77

Abstract Maternal influences on various egg and larval characteristics were examined using plaice from the Irish Sea and Norwegian coastal waters. Thirty-nine batches of eggs were incubated during the spawning season of 2004 and 2005. Thirty-seven larvae from one batch were also monitored individually to examine the influence of egg size on larval size at hatching, yolk sac volume and growth at the individual level. The relationship between egg dry weight (EDW) and egg diameter (ED) differed between the fish from different origins. Egg size increased with maternal size and decreased with progression through spawning. Eggs from the Norwegian coast hatched on average two days earlier than eggs from the Irish Sea. This resulted in the larvae from the Norwegian coast hatching at a smaller size and with larger yolk sac volumes. Larger eggs gave rise to larvae with larger yolk sac volumes at hatching (independent of incubation period) both at the batch and individual level. Larval growth rate was influenced by larval hatching size and yolk sac volume with smaller larvae and larvae with larger yolk sacs having a greater growth rate between hatching and two weeks after hatching. The effects of egg size on larval plaice were present until the end of the yolk sac stage due to differences in the time taken to absorb the yolk sac. Neither hatching rate, age at first feeding nor larval survival was related to maternal size or egg dry weight.

Audrey Geffen: naturlig seleksjon av fødselsdato hos flyndre i Irskesjøen

Fox CJ, AJ Geffen, N Taylor, P Davison, H Rossetti & RDM Nash 2007. Birth-date selection in early life stages of plaice *Pleuronectes platessa* in the eastern Irish Sea (British Isles). *Mar Ecol Prog Ser* 345: 255–269

ABSTRACT: For species with extended spawning seasons, short periods of beneficial conditions often lead to disproportionate survival of sub-sets of the offspring. This has been demonstrated for freshwater fish and for marine pelagic species, but has been less frequently tested for other teleost groups. Using offshore plankton surveys, we constructed egg production curves for plaice *Pleuronectes platessa* L. in the eastern Irish Sea. Data from 5 yr showed that spawning began sometime before January and was completed by the end of April. Over these years the timing of peak spawning varied between mid-February and mid-March. In 2001, 2002 and 2003, we also sampled postsettlement plaice from inshore nursery grounds. Otolith micro-increment analyses and temperature dependent egg development rates were used to back-calculate the birth dates of the settled fish. By June, immigration to the nursery grounds was largely completed and the shape of the reconstructed birth-date distributions corresponded closely to the relevant egg production curves. In contrast to many other studies, there was little evidence for significantly disproportionate survival of specific portions of the egg production curve between spawning and the recently post-settled stages. Such a survival pattern could be generated by a gradual switch from starvation to predation as the principal cause of larval mortality as the spawning season progressed.

Audrey Geffen: tetthetsavhengighet i vekst av juvenile flyndre

Nash RDM, AJ Geffen, MT Burrows & RN Gibson 2007. Dynamics of shallow-water juvenile flatfish nursery grounds: application of the self-thinning rule. *Mar Ecol Prog Ser* 344: 231-244

ABSTRACT: Annual development of density and mean weight of juvenile plaice *Pleuronectes platessa* was examined at 2 nursery grounds (Port Erin Bay, Isle of Man, Irish Sea and Ardmucknish Bay, Firth of Lorne, west coast of Scotland) over a number of years. In both cases there was evidence of 'self-thinning' in the populations when the density was high, although in Port Erin Bay the slope suggested a relationship different from the standard $-4/3$ rule proposed for animal populations. The site specific dynamic thinning lines (dynamic carrying capacities) were consistent with the dynamic thinning line ($-4/3$ rule) for both populations. The 2 nursery grounds were different, with growth rates and densities generally higher on the Ardmucknish Bay nursery ground compared with Port Erin Bay. Similarly, the estimated total biomass of plaice was higher in Ardmucknish Bay than Port Erin Bay, but there was considerable inter-annual variation. Maximum plaice biomass generally occurred from August to September for both sites. In Port Erin Bay this coincided with the maximum consumption rates. The size structure was described using the Gini coefficient (G) and the timing of size structure development by the centre of gravity (CG). The size structure of the populations differed and in both cases varied during the season in response to settlement and mortality. Over the study periods, population density was only occasionally high enough to reach the site specific self-thinning line. This suggests that these populations rarely approached the carrying capacity of the nursery grounds.

Audrey Geffen: hva koster metamorfose hos flatfisk?

Geffen AJ, HW van der Veer & RDM. Nash 2007. The cost of metamorphosis in flatfishes. *Journal of Sea Research* 58: 35–45

Abstract: Flatfish development includes a unique physical metamorphosis with morphological and physiological changes associated with eye migration, a 90° rotation in posture and asymmetrical pigmentation. Flatfish larvae also undergo settlement, a behavioural and ecological change associated with a transition from a pelagic to a benthic existence. These processes are often assumed to be critical in determining recruitment in flatfish, through their impact on feeding, growth and survival. The timing of metamorphosis in relation to settlement varies between different flatfish species and this suggests that growth and development are not closely coupled. Existing information on feeding, growth and survival during metamorphosis and settlement is reviewed. Growth during metamorphosis is reduced in some but not all species. Despite the profound internal and external changes, there are no indications that the process of metamorphosis results in an increased mortality or that it might affect recruitment in flatfishes.

Audrey Geffen: genetiske aspekter ved bevaring av flyndre-arter

Exadactylos, A., Rigby, M. J., Geffen, A. J., and Thorpe, J. P. 2007. Conservation aspects of natural populations and captive-bred stocks of turbot (*Scophthalmus maximus*) and Dover sole (*Solea solea*) using estimates of genetic diversity. – ICES Journal of marine Science, 64: 1173–1181.

Abstract: Population genetic analyses have been highly successful in predicting inter- and intraspecific evolutionary relationships, levels of gene flow, genetic divergence, and effective population sizes. Parameters estimated are evolutionary averages and are therefore relevant for addressing contemporary ecological or conservation issues. Changes in genetic variation within the range of a species may indicate patterns of population structure resulting from past ecological and demographic events that are otherwise difficult to infer, so may provide an insight into evolutionary development. Genetic data, drawn from 14 enzyme loci amplified from two populations of turbot (*Scophthalmus maximus*) and five populations of Dover sole (*Solea solea*) from the Irish Sea were used to examine population structure estimated from measures of genetic diversity. The aim was to provide an empirical assessment of whether artificial propagation poses a genetic threat to conservation of naturally spawning populations, and whether the fitness for natural spawning and rearing can be rapidly and substantially reduced or increased by artificial propagation. Because of prolonged overfishing, turbot and sole populations in the region are below natural levels, and survive in small local populations in fragmented habitats. Genetic data derived from allozymes have shown that populations are characterized by relatively low levels of genetic diversity. A hypothetical model supporting genetic population substructure, such as range expansion with founder-flush effects, and subsequent population decline with small effective population sizes was considered. Observations support our belief that conservation measures based on genetic diversity have to be developed to ensure the survival of this diverse gene pool

Einar Heegaard : biologisk forståelse av log-lineære blandet effekt-modeller

Heegaard, Einar and Nilsen, Trygve. 2007. Local Linear Mixed Effect Models - Model specification and interpretation in a biological context. Journal of Agricultural, Biological, and Environmental Statistics 12: 414-430. DOI: 10.1198/108571107X228134.

Abstract: Clustered data, either as an explicit part of the study design or due to the natural distribution of habitats, populations, and so on, are frequently encountered by biologists. Mixed effect models provide a framework that can handle clustered data by estimating cluster-specific random effects and introducing correlated residual structures. General parametric models have been shown not to suit all biological problems, resulting in an increased popularity for local regression procedures, such as LOESS and splines. To evaluate similar biological problems for clustered data with cluster-specific random effects and potential dependencies between within-cluster residuals, we suggest a local linear mixed model (LLMM). The LLMM approach is a local version of a linear mixed effect model (LME), and the LLMM approach produces: (1) local shared predictions, (2) local cluster-specific predictions, and (3) estimates of cluster-specific random effects conditioned on the covariates. Thus, in addition to the local estimates of the expected response, we obtain information about how the cluster-specific random variability depends on the values of the covariate. Ovary data are used to illustrate the flexibility and potential of this procedure in biological contexts.