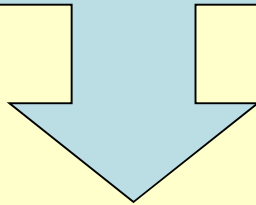


Environomics: Taking the pulse on the marine environment

Key Challenges for Environmental Monitoring Programs

Samples:

- High frequency
- High spatial resolution



Analysis by
highly trained
taxonomists

Bottleneck!!



Classical environmental monitoring

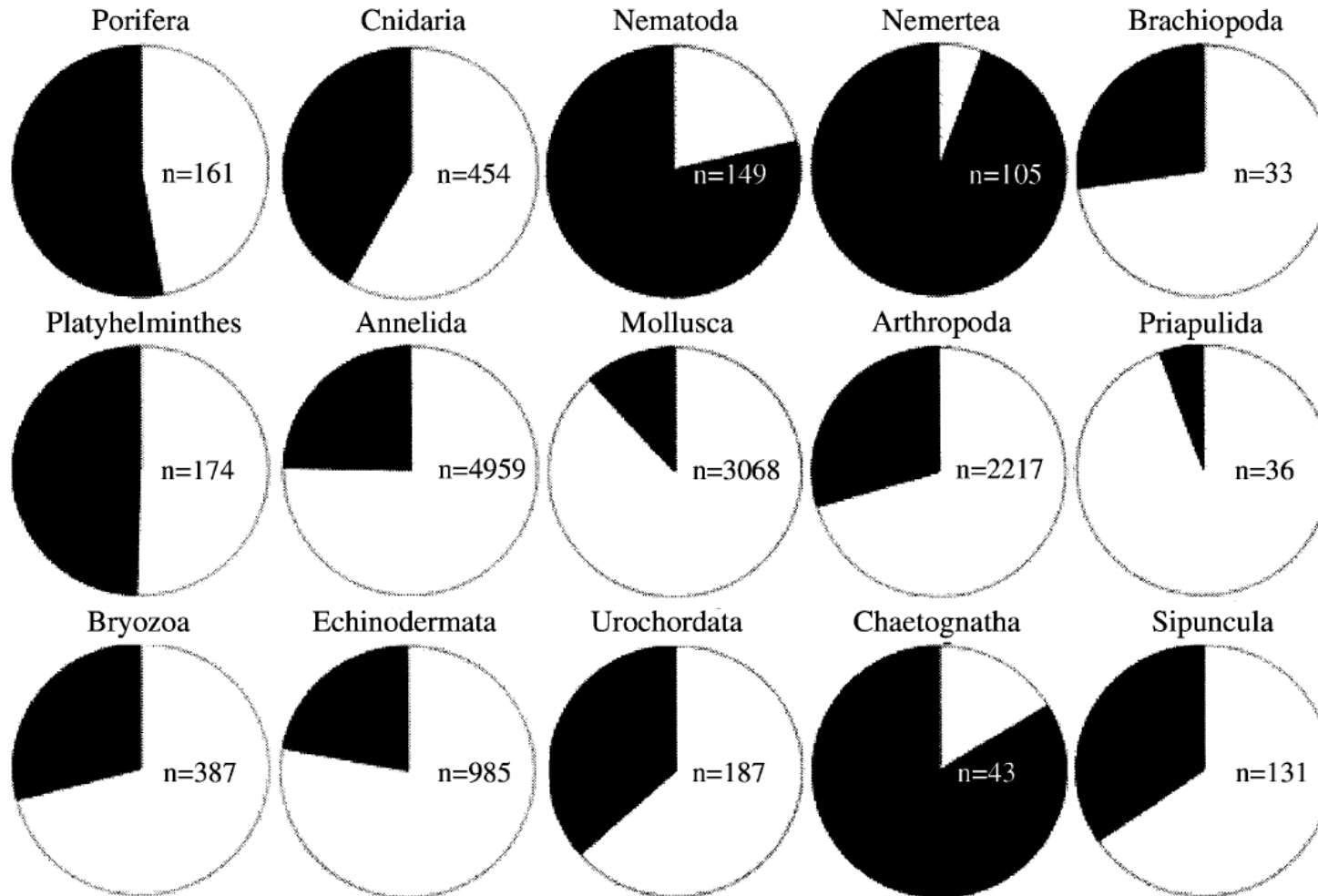
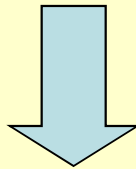


Figure 1. Comparison between the percentage of determined (white) and undetermined (black) species in 138 published papers and reports from the North Atlantic between 1960 and 2004 (references are available on request from the first author). n indicates the cumulative number of taxa included in the studies.

Environomics

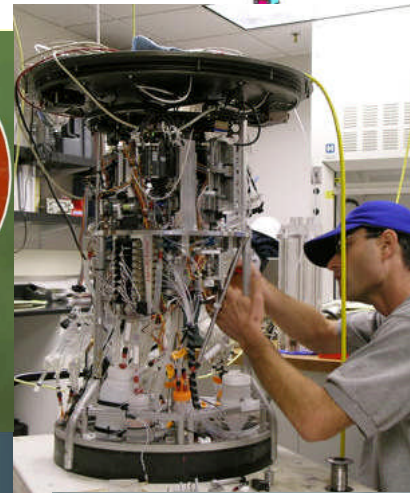
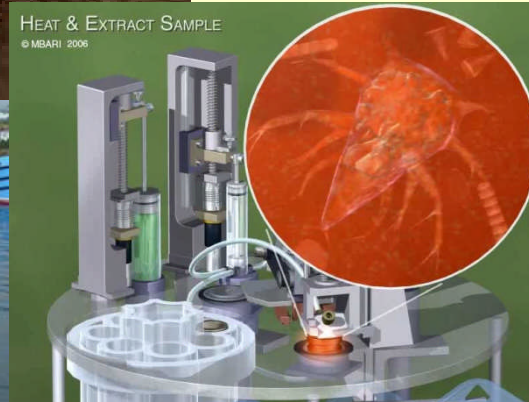
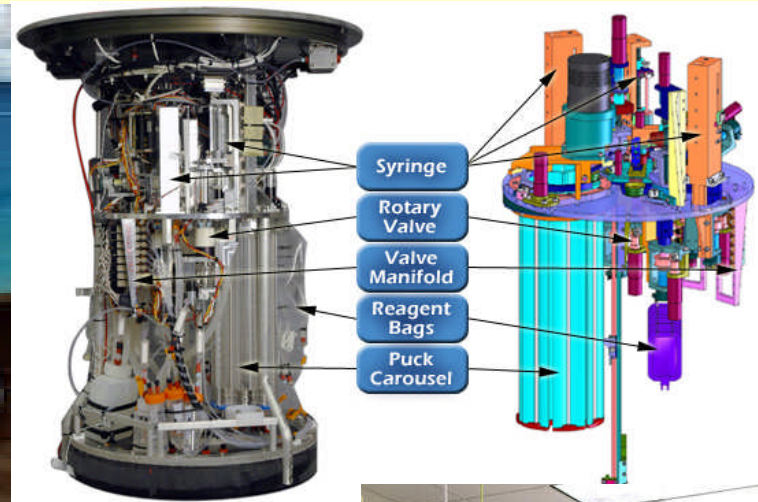
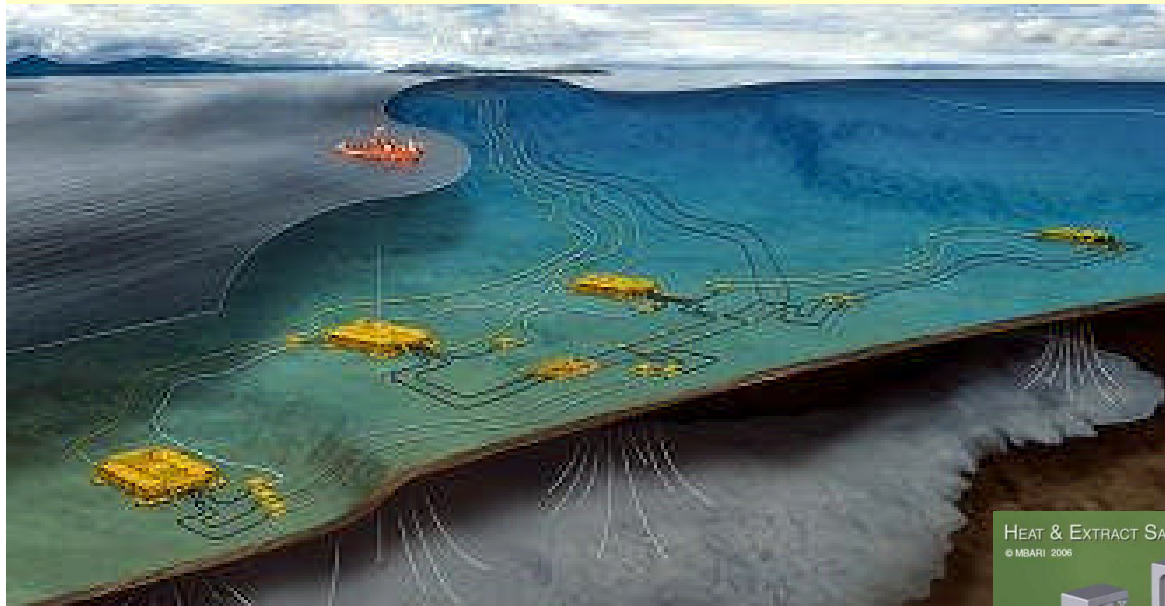
(Meta-"omics")

- Who is there? (Meta-genomics)
- What is their potential? (Meta-genomics)
- What are their state? (Meta-transcriptomics and Meta-proteomics)
- How do they influence each other? (Meta-metabolomics)



How an anthropogenic stressor influence the living marine resources?

Subsea installations - Biological sensors?



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Samples:
-High frequency
-High spatial resolution

High through-
put analysis by
Environomics

No Bottleneck!!

Thank you!

- Katrine Lekang
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- Den Norske Veritas (DNV)



Principal Component analysis of 4 marine ecosystems

Coarse sand - Huldra (C1-C3)

Medium sand - Oseberg (B1-B3)

Fine sand - Brage (A1-A3)

Clay - Fram Vest (D1-D3)

Region III - Oseberg / Troll

