

UNIVERSITETET I OSLO

Generiske ferdigheter så fagspesifikt som mulig

Relevant undervisning for masterstudenter

Edina Pózer – geofag

Heidi Sjursen Konestabo – biofag

Realfagsbiblioteket

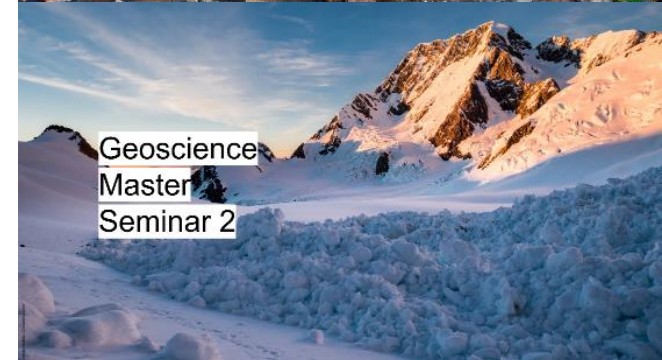
05. Juni 2025



Bakgrunn

Masterseminarene ved MatNat, UiO

- Det de trenger når de trenger det
- Ferdigheter i vitenskapelig kommunikasjon, etikk og forskningspraksis
- Bygge nettverk
- Praktisk arbeid, gruppearbeid
- Noen timer per semester
- Matservering
- Notater og materiale i Canvas
- Samarbeid med vitenskapelige ansatte og studieadministrasjon på instituttet



Innhold i masterseminarene

MS = masterseminar, 1, 2, 3 eller 4 = hvilket semester

- Forskningsdatahåndtering (MS1)
- Prosjektbeskrivelse (MS1)
- Hvordan lese vitenskapelige artikler effektivt (MS2)
- Avansert litteratursøk i fagdatabaser (MS2)
- Strukturere en masteroppgave (MS3)
- Figurer, data og kart (MS3)
- Hvordan skrive diskusjonen –mest sannsynlig den viktigste delen av masteroppgaven (MS4)
- Forberedelse til mastereksamen (MS4)



Bioscience
Master Seminar 1



Bioscience
Master Seminar 2



Bioscience
Master Seminar 3

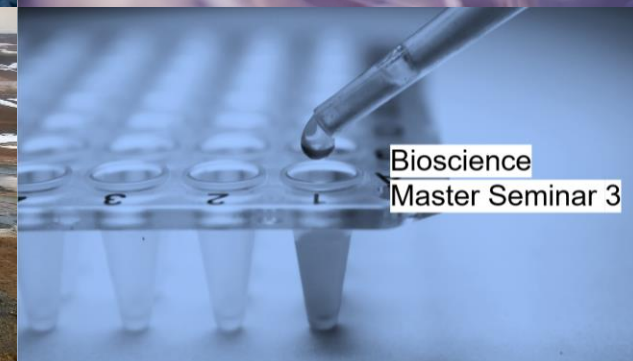


Bioscience
Master Seminar 4

Sammenslåing

Bio – Geo

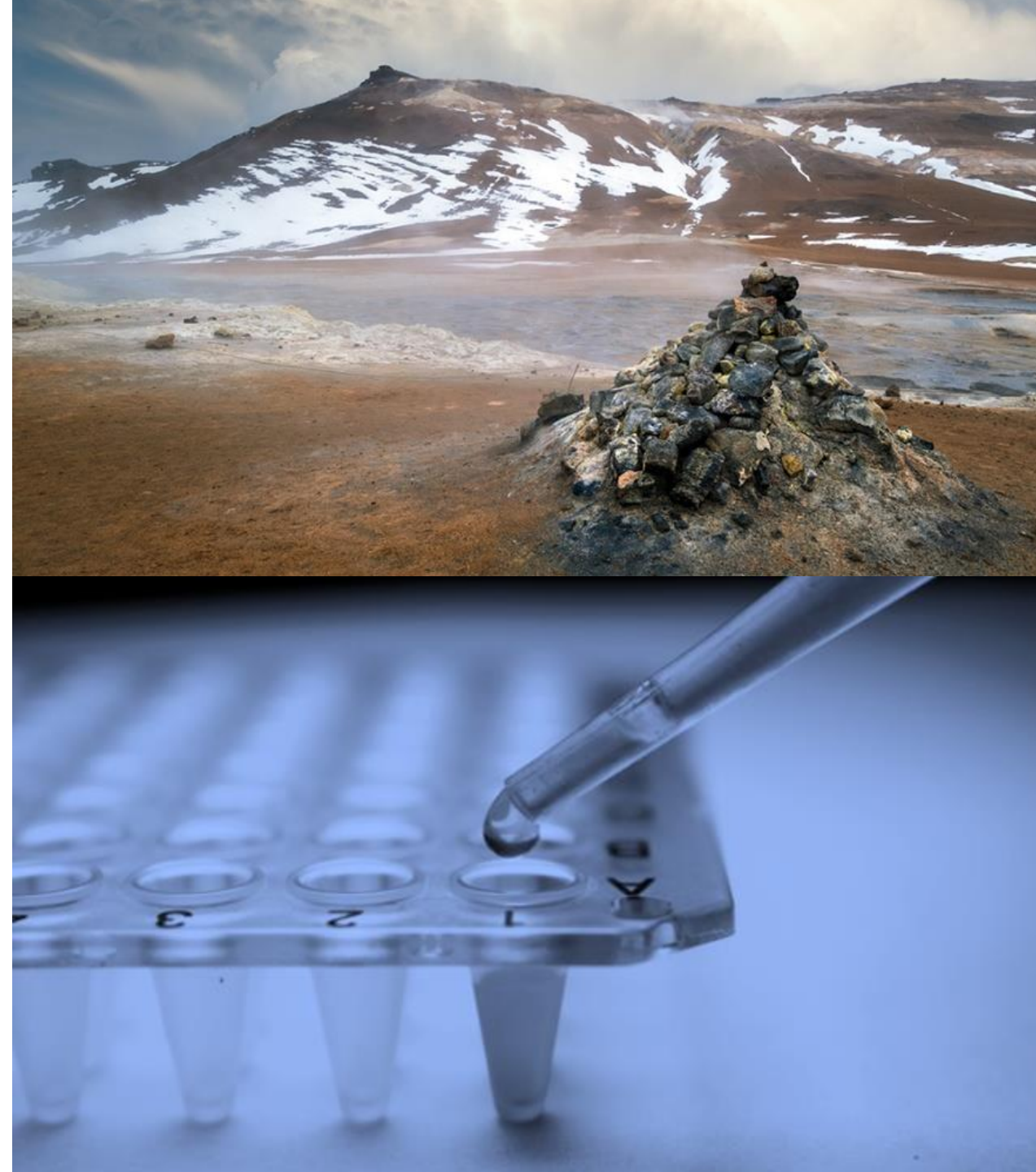
- Samarbeid
- Fagene har like forskningstradisjoner
- Samme tema til samme tid
- Underviser allerede noen tema på hverandres seminarer
- Ikke for mange studenter på seminarene
- Effektivitet og ressursmangel



Temaer

MS3 Part1 & 2

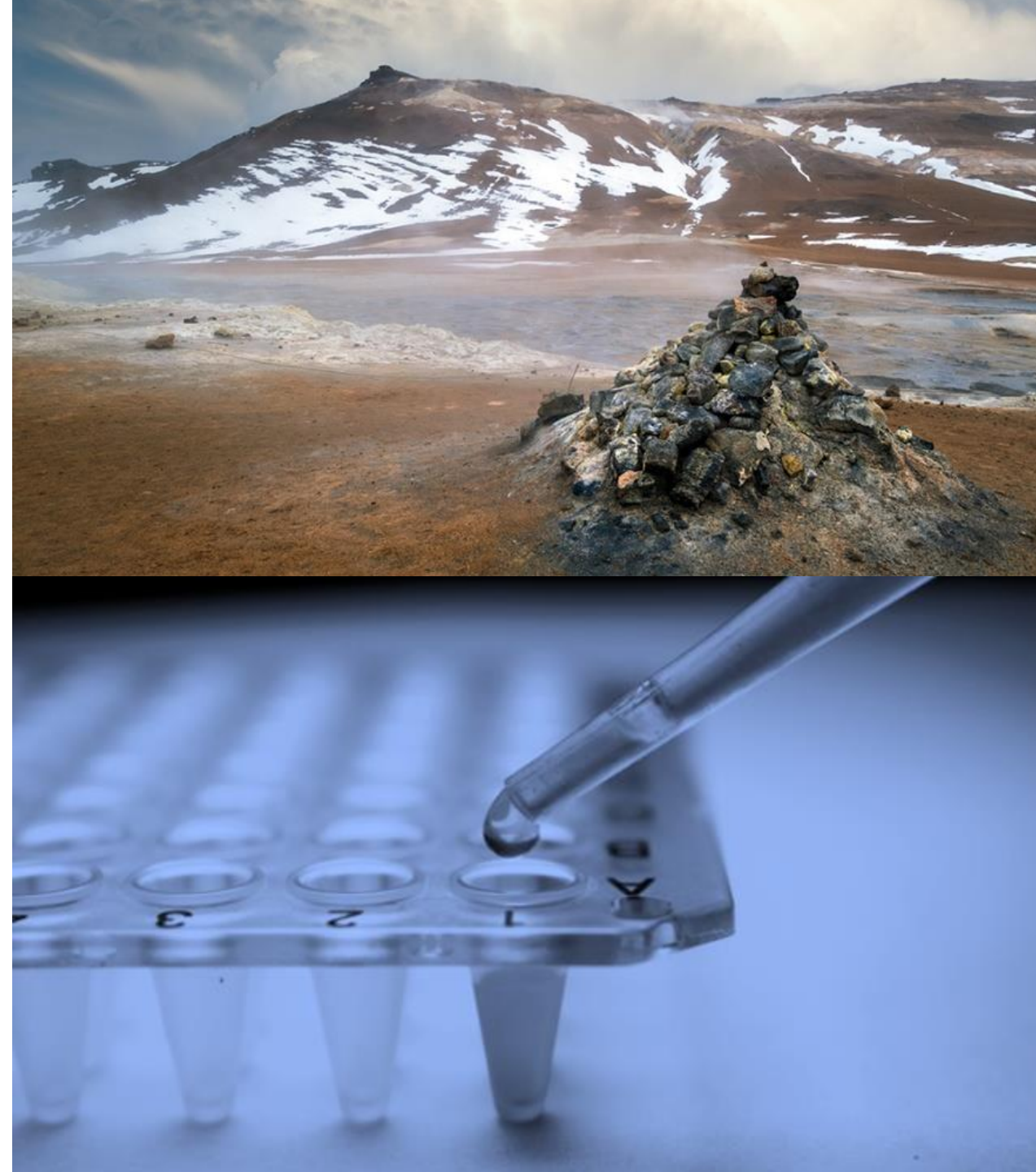
- *How to write a master thesis & Writing exercise*
- *Your results: statistics, significance and truth*
- *How to best present your science, and how to make a better poster if you were going to a conference*
- *Figures, maps and datasets: how to visualize your scientific results in your thesis*



Temaer

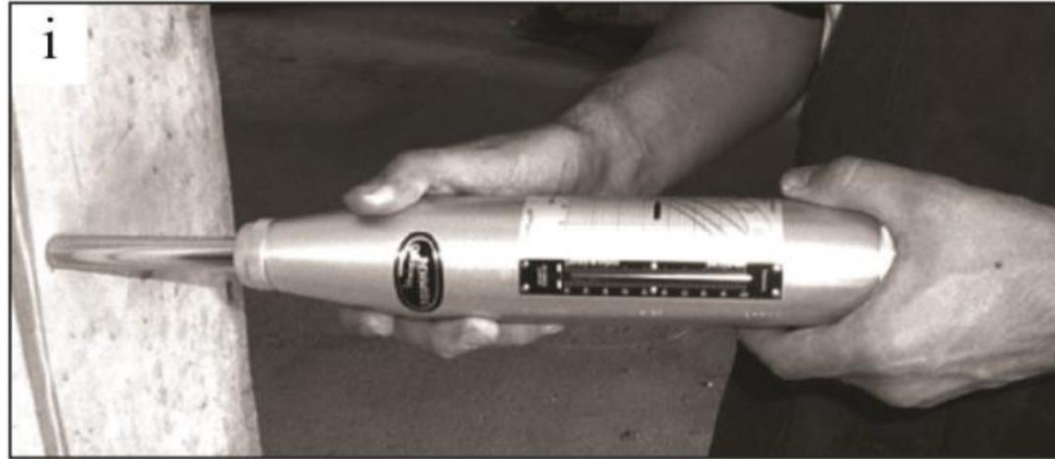
MS4 Part2

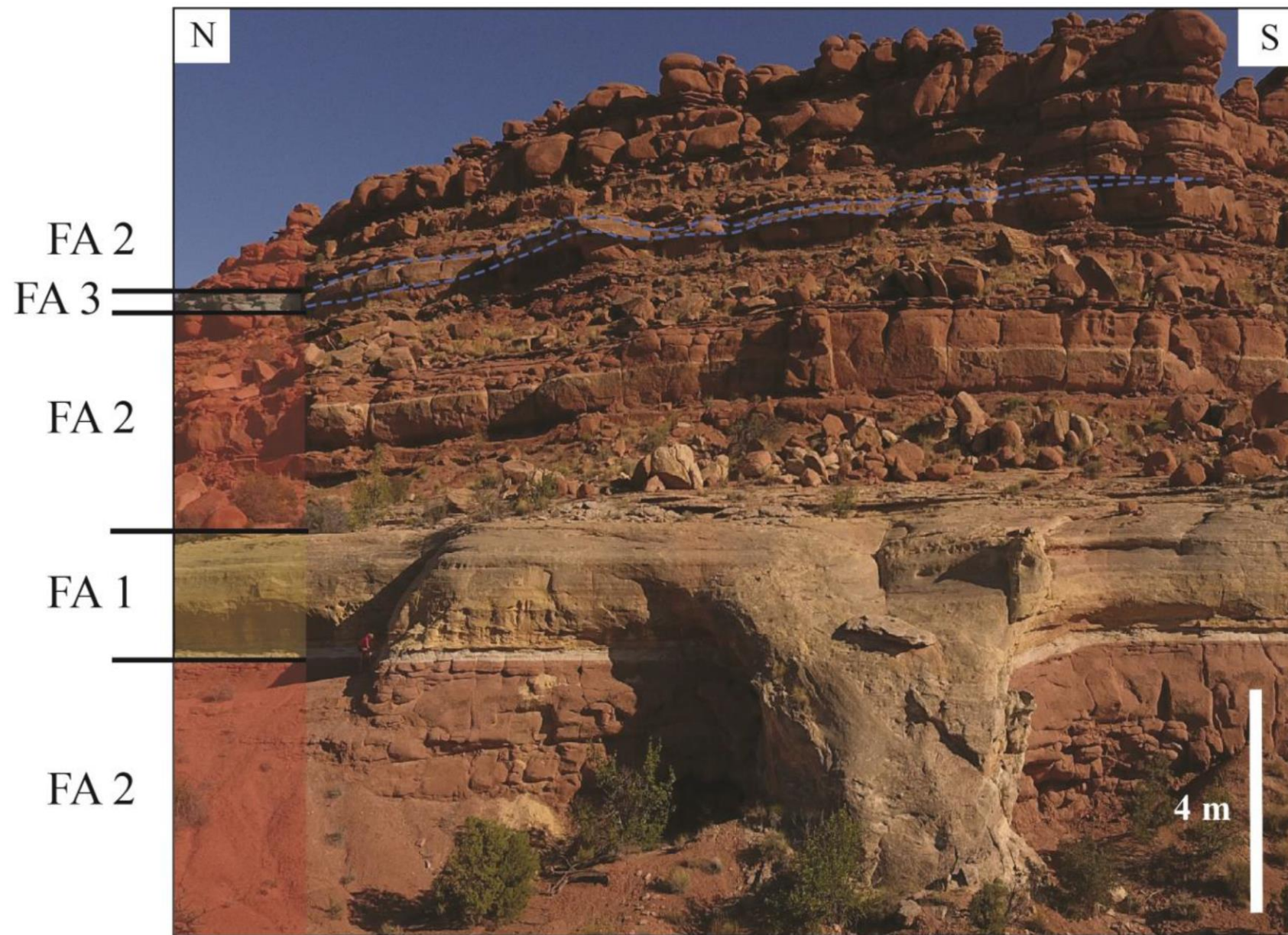
- *Scientific language with writing exercises*
- *Writing tips from supervisors*
- *We will work on your Discussion, probably the most important part of your thesis*
- *What to do if you want to use other peoples' figures/photos/tables/etc.*

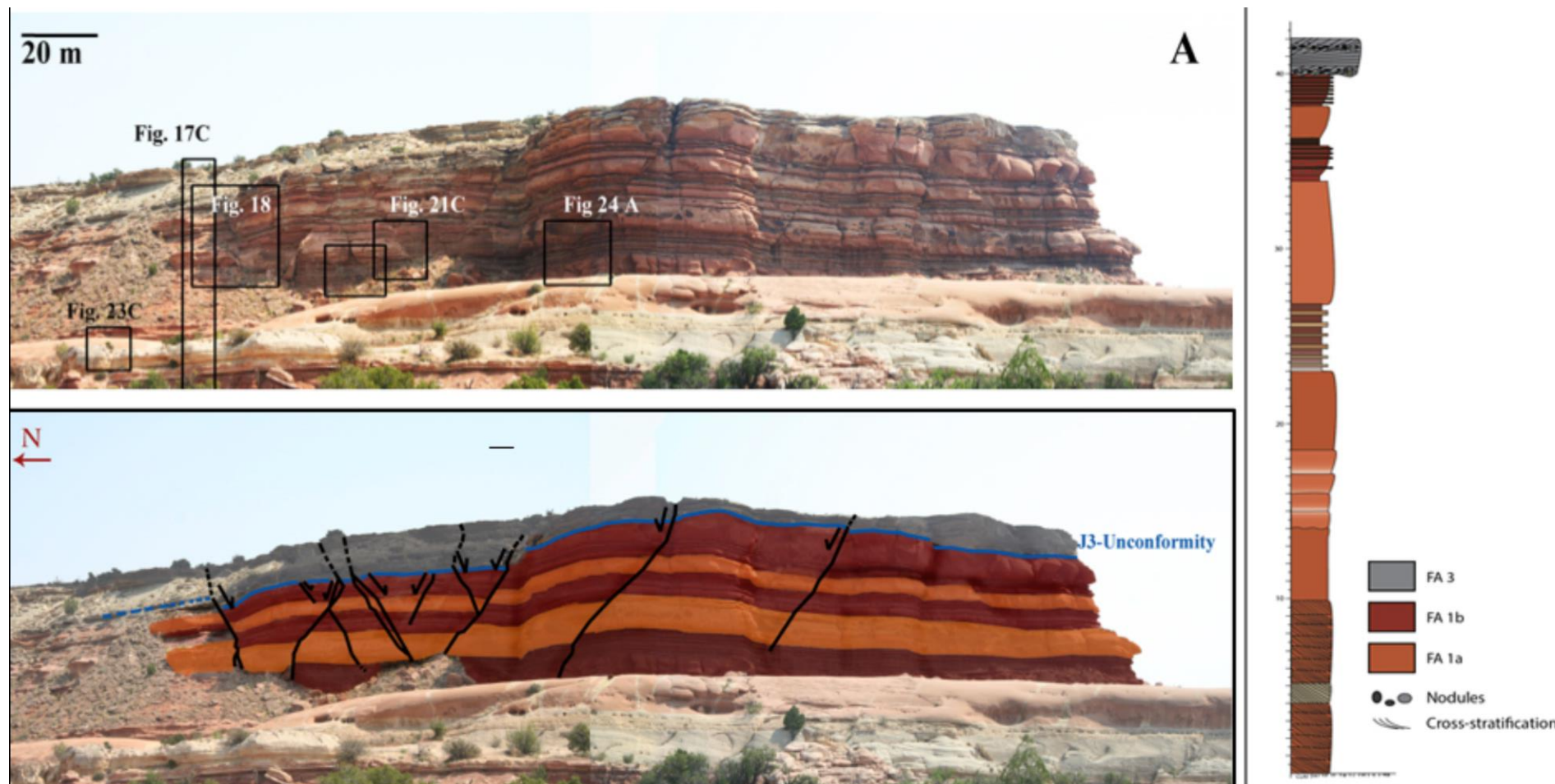




Fagspesifikke eksempler i undervisningen







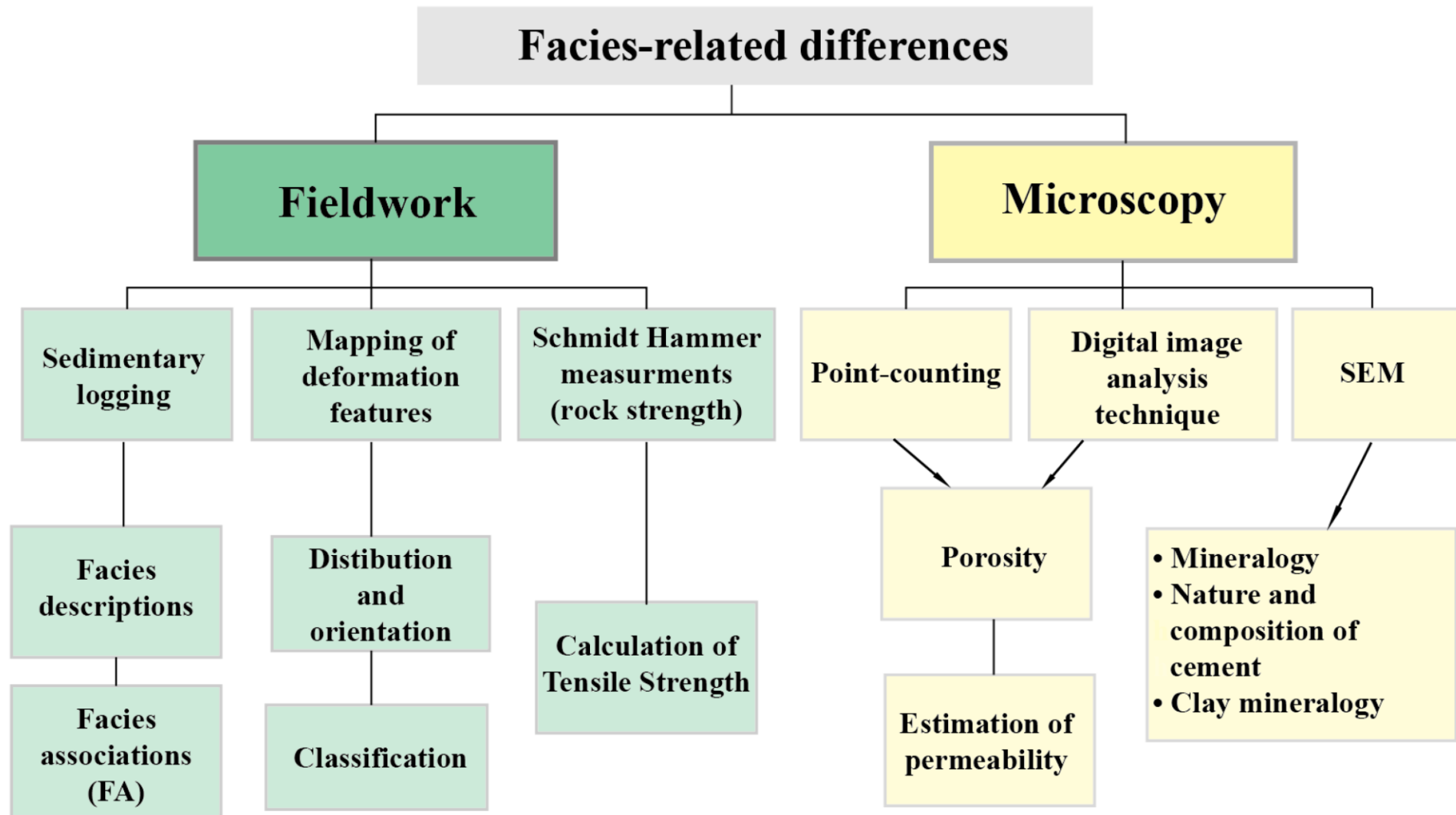
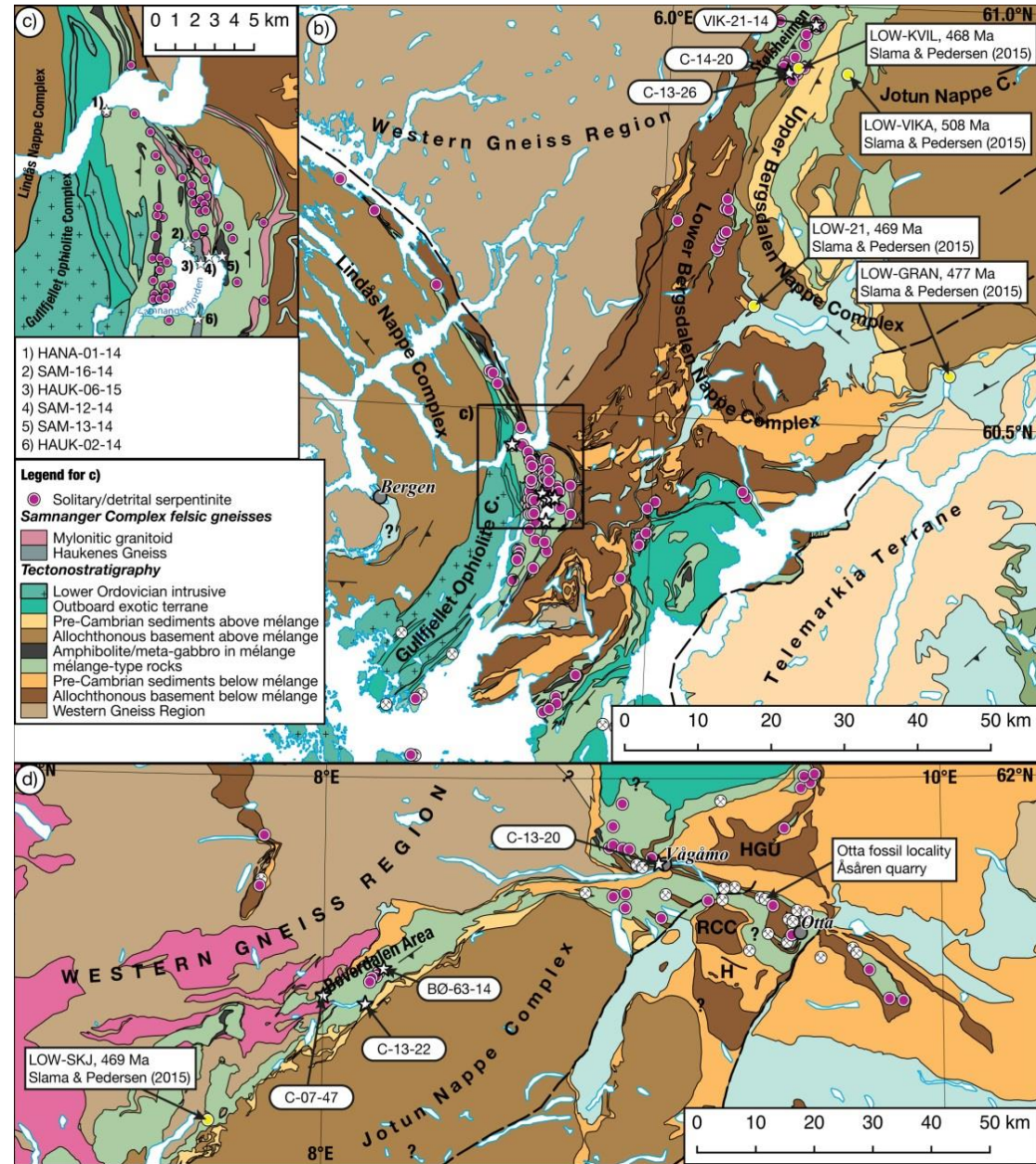


Figure 4.1: Workflow considered to complete this study.



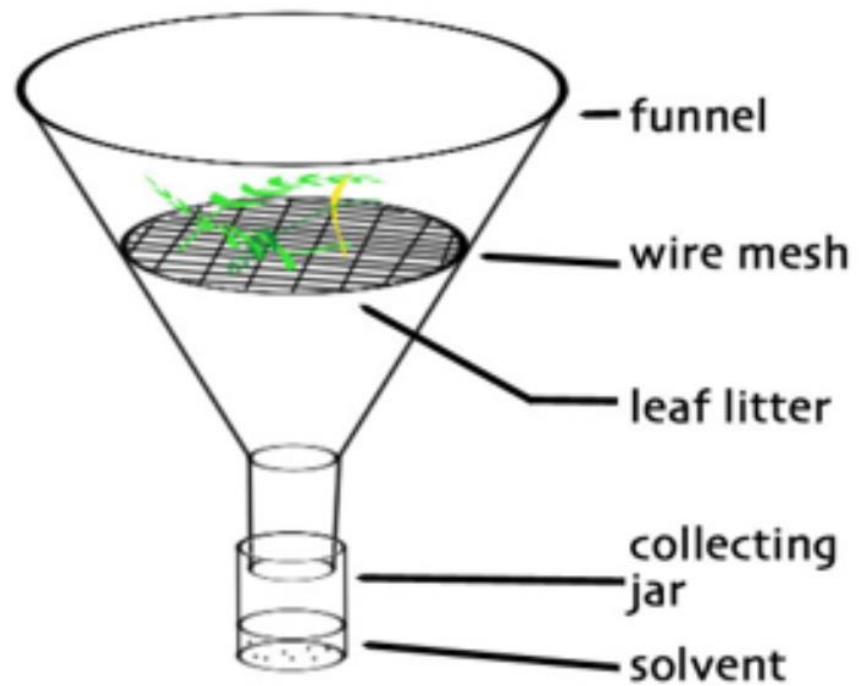


Figure 4.10.5 Schematic drawing of a Tullgren funnel. Re-used with permission from Dr. Grant Brown, University of St. Andrews. <http://biology.st-andrews.ac.uk/gardenlife/sampling.html>



Graphical abstract

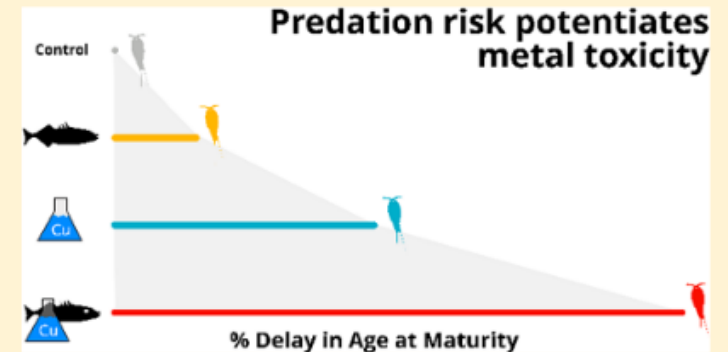
Predation Risk Potentiates Toxicity of a Common Metal Contaminant in a Coastal Copepod

Torben Lode, Jan Heuschele, Tom Andersen, Josefin Titelman, Ketil Hylland, and Katrine Borgå*

Department of Biosciences, University of Oslo, P.O. box 1066 Blindern, 0316 Oslo, Norway

 Supporting Information

ABSTRACT: To examine whether natural stressors like predation risk affect responses to anthropogenic contaminants, we exposed nauplii of the copepod *Tigriopus brevicornis* to chemical cues from fish (kairomones) and copper (Cu). We tested effects of these treatments, singly and combined, on copepod age and size at maturity, and development stage sensitivity, while controlling for effects of genetic heterogeneity (clutch identity). Predation risk, Cu and clutch identity interacted in their effect on development time. Predation risk alone had minor effects, but potentiated Cu toxicity in the combined treatment by doubling the delay in age at maturity, as compared to Cu exposure alone. This potentiating effect on developmental delay appeared already at the first copepodite stage. The specific strength of response varied among nauplii from different females' clutches. There were no differences in copepod size at maturity among treatments. We did, however, find an interaction between the effect of Cu and clutch identity on copepod growth. Our results demonstrate the importance of ecological interactions for potentiating the toxicity of environmental contaminants. We also demonstrate the need to consider genetic heterogeneity in ecotoxicology. Natural variation in stressor responses has implications for the interpretation of results from toxicological studies using single-clone or inbred culture populations.



Scientific language

Redundant words and repetition

~~In every practical sense~~, the field is basically abandoned, although there are five wells which are not abandoned.

Passive + «there are»

18

The field is essentially abandoned, except for five wells.

Only five wells still operate in the field.

8

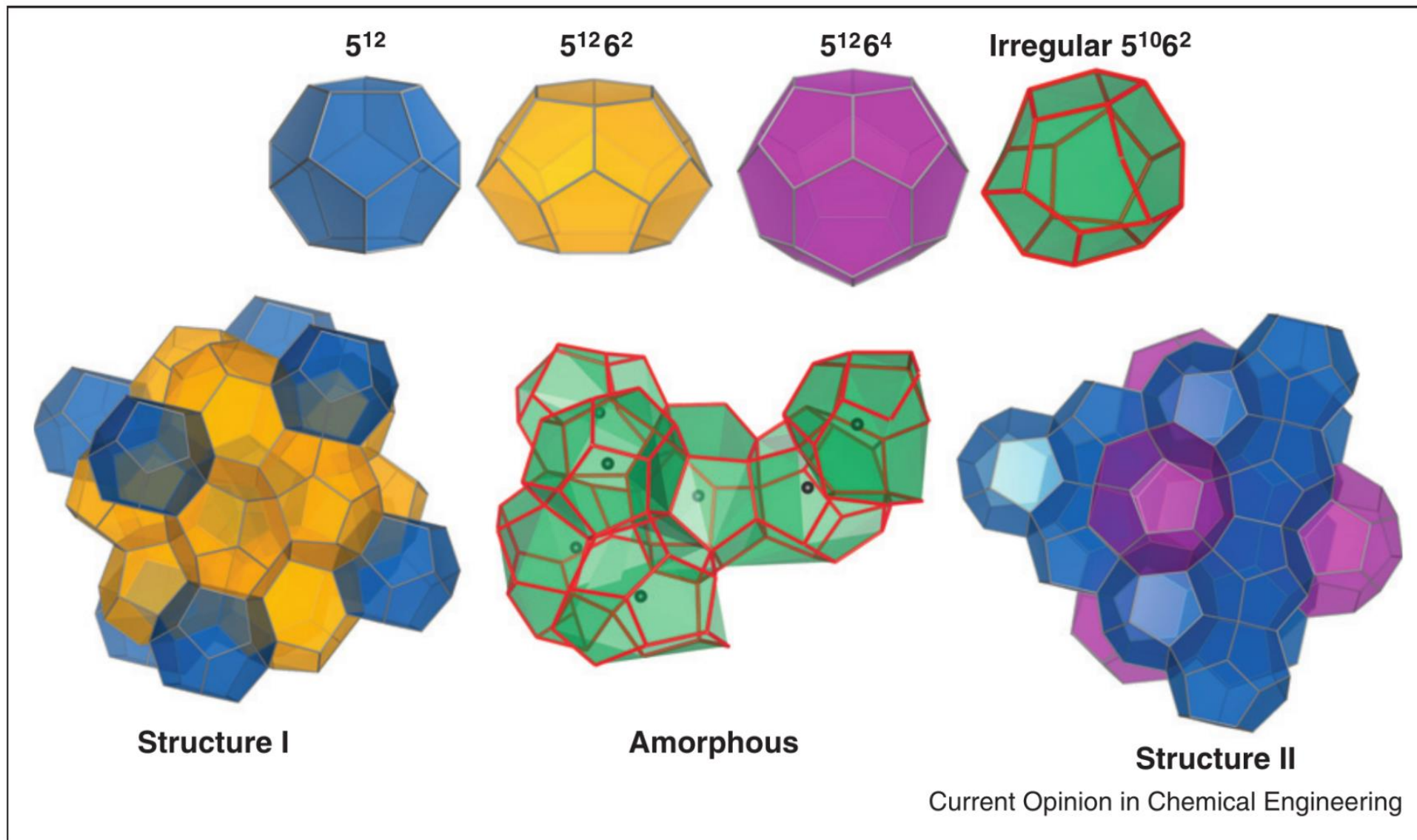


Figure 2.5: Cage structures of single guest methane hydrates occurring in nature. Both structure 1 (sI) and structure 2 (sII) contain the 5¹² cage. Reprinted from Barnes & Sum [6] with permission from Elsevier.

Studentenes tilbakemeldinger

Tilbakemeldinger fra masterseminarer

År	MS	Felles undervisning Bio – Geo	Positiv	Nøytral	Negativ
2024	4	Ja	10	1	0
2024	3	Ja	7	2	0
2023	4	Nei	10	0	0
2023	3	Nei	14	2	0
2022	4	Nei	12	0	0
2022	3	Nei	15	2	0

Tilbakemeldinger, separate seminarer (bio)

"What worked well?"

- Practical things to remember for later
- Alt var veldig lærerikt og nyttig
- Good insight in how things can be structured.
- Great!
- Veldig interessant og lærerik presentasjon om å lage poster!
- Good overview on resources
- Really liked that we went into depth on this
- Some nice reminders from all presentations
- Good to be reminded to use data visualisation to understand your data better

Tilbakemeldinger, separate seminarer (bio)

"What could have been better?"

- Taking a bit long on some of the topics
- Struggling with attention span, more breaks?
- Much of the content is stuff I have heard before, so it felt a bit long, but then again we do not have these seminars that often, so it was not too bad.
- Could have been later in the semester
- Could have been earlier in the semester
- Could have been more often seminars!

Tilbakemeldinger, felles seminarer (bio – geo)

"What worked well?"

- Good examples
- Happy people
- Safe environment
- Relevant topics
- Effective, not too long
- Writing exercises were helpful
- Lots of good tips and examples
- Will be helpful in the writing process later
- Very useful topics
- Lots of things I did not know
- Good writing exercises

Tilbakemeldinger, felles seminarer (bio – geo)

"What could have been better?"

- More examples from **my field**
- More discussion with people **from my own field**
- More info on previous seminars
- Two hours is long enough
- Hard to work on discussion since I have no results yet
- It was **more difficult** to discuss **across disciplines**
- Will be helpful in the writing process later
- Would be **better to have separate master seminars** as before, easier to build network
- Could have more time for discussions

Konklusjoner

Generelt sett ikke dårligere evaluering ved felles seminarer (ikke flere "nøytral" eller "negativ")

Fritekstkommentarer viser at flere av studentene synes det er vanskeligere å diskutere i grupper med studenter fra andre fag

Eksemplene som brukes må enten være generelle nok til å forstås av studenter fra begge fagområdene eller så må man ta forbehold om at ikke alt blir forstått på samme måte

Faglig dybde øker relevansen og er viktig for engasjementet

For undervisere: Lettere å forklare med fagspesifikke eksempler

A landscape photograph of a volcanic area. In the foreground, a large, dark, conical pile of stones (a cairn) sits on a reddish-brown, sandy ground. The middle ground shows a flat, wet, reddish-brown surface, possibly a dry lake bed or a path. In the background, a large, dark, snow-dusted mountain rises under a cloudy sky. The snow is patchy and white against the dark volcanic rock. The overall scene is desolate and rugged.

Spørsmål?

UNIVERSITETET I OSLO

Takk!

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