



**Program ForBio-TMU course**  
**DNA Metabarcoding: Data processing and interpretation (Bio-3025/8025, UiT)**

Monday, Feb. **03** – Saturday, Feb. **08**, 2020, Tromsø University Museum – Museum Salen – 1<sup>st</sup> floor. Lars Thørings veg 10, 9006 Tromsø

*(i) Teachers and guest lecturers:*

**Eric Coissac**, LECA, Grenoble [eric.coissac@metabarcoding.org](mailto:eric.coissac@metabarcoding.org)

**Tristan Cumer**, Dept. Ecology & Evolution, UNIL [tristan.cumer@unil.ch](mailto:tristan.cumer@unil.ch)

**Inger Alsos**, Tromsø University Museum, UiT [inger.g.alsos@uit.no](mailto:inger.g.alsos@uit.no)

**Sandra Garcés Pastor**, Tromsø University Museum, UiT [sandra.garces-pastor@uit.no](mailto:sandra.garces-pastor@uit.no)

**Anthony Chariton**, Dept. Biological Sc., Macquarie University, Sydney  
[anthony.chariton@mq.edu.au](mailto:anthony.chariton@mq.edu.au)

**Peter Heintzman**, Tromsø University Museum, UiT [peter.d.heintzman@uit.no](mailto:peter.d.heintzman@uit.no)

**Pierre Taberlet**, LECA, Grenoble [pierre.taberlet@univ-grenoble-alpes.fr](mailto:pierre.taberlet@univ-grenoble-alpes.fr)

**Nigel Yoccoz**, UiT [nigel.yoccoz@uit.no](mailto:nigel.yoccoz@uit.no)

*(ii) Help during the Obitools Practicals:*

**Anthony Chariton**, Dept. Biological Sc., Macquarie University, Sydney  
[anthony.chariton@mq.edu.au](mailto:anthony.chariton@mq.edu.au)

**Lasse Topstad**, Tromsø University Museum, UiT, [lasse.topstad@uit.no](mailto:lasse.topstad@uit.no)

*(iii) Course Organization*

**Lasse Topstad**, Tromsø University Museum, UiT, [lasse.topstad@uit.no](mailto:lasse.topstad@uit.no)

**Galina Gusarova**, Tromsø University Museum, UiT, [galina.gusarova@uit.no](mailto:galina.gusarova@uit.no)

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**Monday, 03 February**

8.45 Coffee/tea

9-10.30:

Welcome and Individual Presentations – *all participants.*

10.30-11: Coffee/tea

11 -13:

Practical session 1: UNIX operating system and main commands - *Eric Coissac & Tristan Cumer*

13-14: Lunch break

14-15.30:

Practical session 2: basic applications of R/R-studio - *Eric Coissac & Tristan Cumer*

15.30-16.00: Coffee/tea

16-18:

**Lecture 1: Selection of DNA Metabarcoding markers & primer design. EcoPrimers & EcoPCR demonstration tutorial – *Eric Coissac***

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## **Tuesday, 04 February**

8.45 Coffee/tea

9-10:

**Lecture 2: Raw sequence analysis (OBITools) - *Eric Coissac***

10 -10.30 Coffee/tea

10.30 -11.30: Guest lecture

**Lecture 3: Metabarcoding of vascular plants from soil and sediments - *Inger Alsos***

12-13.30 Lunch break

13.30-15

Practical session 4: OBITools (part 1) - *Tristan Cumer*

15-15.30 Coffee/tea

15.30-17.30:

Practical session 4: OBITools (part 1, continued) - *Tristan Cumer*

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## **Wednesday, 05 February**

8.45 Coffee/tea

9-10: Guest lecture

**Lecture 4: Ancient animal DNA in the environment - *Pete Heintzman***

10 -10.30 Coffee/tea

10.30 -12

Practical session 5: OBITools (part 2) - *Tristan Cumer*

12-13.30 Lunch break

13:30-14:30: Guest lecture

**Lecture 5: “More on technical aspects of DNA Metabarcoding” – *Pierre Taberlet***

15.30-15.00 Coffee/tea

15.30-17:30:

Practical session 5: OBITools (part 2, *continued*) - *Tristan Cumer*

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**Thursday, 06 February**

8.45 Coffee/tea

9-10:

**Lecture 6: QA/QC in Metabarcoding and its impact on reproducibility - *Anthony Chariton***

10 -10.30 Coffee/tea

10:30-11:30 Guest lecture

**Lecture 7: DNA Metabarcoding: methods for estimating false positive and negative rates - *Nigel Yoccoz***

11:30-13:00 Lunch break

13:00-14.00 Guest lecture:

**Lecture 8: by *Sandra Garcés Pastor* – *title to be announced***

14:00-15.00:

Practical session 6: OBITools (part 3) - *Eric Coissac, & Tristan Cumer*

15-15.30 Coffee/tea

15.30-17:00:

Practical session 6: OBITools (part 3, *continued*) - *Eric Coissac & Tristan Cumer*

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## **Friday, 07 February**

8.45 Coffee/tea

9-10: Guest lecture

**Lecture 9: “DNA Metabarcoding is not magic” - *Pierre Taberlet***

10 -10.30 Coffee/tea

10.30 –11.30

**Lecture 10: DNA Metabarcoding and Biodiversity indices - *Eric Coissac***

11.30-12.30: Practical session 7: Biodiversity indices and Multivariate ordination in R - *Eric Coissac*

13-14.30 Lunch break

14-15:

*Discussion/ additional lecture slot/Obitools session - available*

15-15.30 Coffee/tea

15.30-17:30:

*Discussion/ additional lecture slot/Obitools session - available*

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## **Saturday, 08 February**

10-11, Coffee/tea 9.45

**Introduction to environmental DNA dataset(s) for practical session 8 - *Eric Coissac & Tristan Cumer***

11:30 -13.00:

Practical session 8: Project work - *Eric Coissac & Tristan Cumer*

13-14 Lunch break (we order pizza)

14-15:00:

Practical session 8 (*continued*): Project work - *Eric Coissac & Tristan Cumer*

## Participants

1	Scarlett Zetter	sze004@uit.no	EcoGen, UMAK
2	Sascha Jensine Schiøtt	sasc@natur.gl	Aarhus University
3	Tuluğ Gülce Ataman	gulce_ataman@hotmail.com	UiT The Arctic University of Norway (Faculty of Biosciences, Fisheries and Economics.)
4	Oriol Grau	grau.oriol@gmail.com	Global Ecology Unit, CREAM-CSIC-UAB (Barcelona, Spain)
5	Yi Wang	yiwang@uni-konstanz.de	University of Konstanz, Department of Biology, research group Epp
6	Aya Komatsu	aya.komatsu@uit.no	The Arctic University Museum of Norway, UiT the Arctic University of Norway
7	Luke Elliott	lucas.elliott@uit.no	Tromsø Museum - UiT
8	Danielle Grant	dani@norceresearch.no	NORCE Climate
9	Anna Tellnes	anna@tellnes.no	UiO, NHM, PET
10	Rita Cabilan Just Olsen	rcolsen@student.ibv.uio.no	University of Oslo, NHM, PET-group
11	Kathrin Ganz	kathrin.ganz@ips.unibe.ch	University of Bern, Institute of Plant Sciences, Paleoecology-group
12	Giorgia Beffa	giorgia.beffa@ips.unibe.ch	University of Bern, Switzerland, Department of Biology, Institute of Plant Sciences, Research Group Paleoecology
13	Moa Pettersson	moapet17@student.hh.se	Halmstad University
14	Sam Hudson	smh1n18@soton.ac.uk	University of Southampton
15	Tone Jøran Oredalen	tone.j.oredalen@usn.no	University of South-Eastern Norway, Department of Natural Sciences and Environmental Health, Research group: Aquahit
16	Maonian Xu	maonian@hi.is	Icelandic Institute of Natural History, Botany division and University of Iceland, Phytochemistry group
17	Felicia Ulltin	feliciaulltin@gmail.com	Monitoring of benthic infauna along the Swedish west coast, Gothenburg University
18	Daniel Abiriga	daniel.abiriga@usn.no	University of Southeast Norway
	<b>Free attendance</b>		
19	Anna Beata Seniczak	Anna.Seniczak@uib.no	UNIVERSITY OF BERGEN University Museum of Bergen Department of Natural History Division of Entomology
20	Luis Martell	Luis.Martell@uib.no	University Museum of Bergen, Department of Natural History
21	Maria Leunda	maria.leunda@ips.unibe.ch	Institute of Plant Sciences, University of Bern (Switzerland)

22	Maité Jacquot	mjacquot@abo.fi	Åbo Akademi University, Environmental and Marine Biology, Doctoral Network in Functional Marine Biodiversity
23	Kimmo Kumpula	kimmo-k@hotmail.se	Umeå University, Department of Ecology and Environmental Sciences
24	Nina Filippova	filippova.courlee.nina@gmail.com	Yugra State University (Khanty- Mansiysk, Russia)
25	Heidi Herlevi	hherlevi@abo.fi	Åbo Akademi University, Environmental and Marine biology
26	Matthew Ogwu	matthew.ogwu@uniben.edu	University of Camerino, Italy