Nordic EMBL Partnership: HUB training courses, NordForsk 2021-2023		
Node	**Course title**	**Year**
DANDRITE (Poul Nissen and Thomas Boesen)	**Cryo-EM of membrane proteins and biomembranes (CryoNET)** Learn about single-particle analysis, 3D reconstruction of biomolecules at atomic level.	**2021**
NCMM (Elisa Bjørgo)	**Molecular Medicine** This course provides an overview of molecular medicine topics relevant to 1) disease mechanisms and development, 2) translational medicine and 3) the future of diagnostics and targeted therapies integrated to stratified and personalized medicine.	**2021**
FIMM (Ulla Tuomainen & colleagues)	**Building Bridges training event** Online Building Bridges Symposium arranged to bridge clinical and basic/translational research and give examples of how research groups are working together towards a better understanding of the pathophysiology of disease and improved options for patient treatment. Topic: 'From Research Infrastructure to clinical translation', with feature research that has relied heavily on infrastructure support. Incl.: A set of Focused topical discussions, tailored specifically to the Nordic EMBL staff, to lift out some of the topics dealt with in the above, e.g. clinical-grade sequencing. Possibly as interactive journal clubs.	**2021**
MIMS (Linda Sandblad & Richard Lundmark)	**Correlative light and electron microscopy** Provides insight and learning about the biophysical characterization of molecular interactions and structural analyses of living cells.	**2022**
DANDRITE (Sadegh Nabavi, Keisuke Yonehara)	**Methods in neuroscience** Methods and rationales of experimental approaches to systems neuroscience, molecular cell biology and cellular networks of brain.	**2022**

NCMM (Sebastian Waszak)	**Multi-omics data analyses and integration for precision medicine** A theoretical and a practical approach to bioinformatics	**2022**
FIMM (Katja Kivinen & colleagues)	**Translational Medicine in practice** Hands-on course at FIMM, coordinated by the Technology Centre heads, featuring High-Throughput Biomedicine, metabolomics, single cell sequencing, high-contents imaging etc. Showcase translational projects such as eCare for me which utilise a set of technologies	**2023**
MIMS (Johan Henriksson)	**Single Cell Genomics - from protocol development to data analysis** Provides training in experimental design and data analysis	**2023**
All nodes (plan and location tbd)	**Artificial intelligence and big data approaches in Molecular Medicine** Computational approaches for detection of correlations, pattern recognition, and predictions using artificial intelligence/machine learning tools.	**2023**

Courses at host universities also open to Nordic EMBL Partnership researchers 2021 (in addition to HUB courses)

Note that as of writing, February 2021 , the courses listed below are planned to go ahead. However, cancellation is possible.

Node	Course title	Date	Credits	More info

DANDRITE	**Graduate Neuroscience Course.** *Currently planning a physical course in Aarhus for 2021.*	**1 March**	**6.5 ECTS**	**https://au.phd-courses.dk/CourseCatalog/ShowCourse/677**
DANDRITE	**Flow Cytometry.** *Currently planning a physical course in Aarhus for 2021.*	**12 April (application deadline 15 March)**	**2.9 ECTS**	**https://au.phd-courses.dk/CourseCatalog/ShowCourse/610**
DANDRITE	**51st Sandbjerg Meeting on Membrane** Transport NOW CANCELLED, planned for 2022	**10 May (application deadline 12 April)**	**1.8 ECTS**	**https://au.phd-courses.dk/CourseCatalog/ShowCourse/693**
NCMM	**NorMIC imaging workshop.** *Currently planning both online physical course in Oslo (first come first served for physical attendance) for 2021.*	**25-28 May 2021**	**TBC for 2022 (currently 2 credits for UiO students)**	**https://www.med.uio.no/ncmm/english/news-and-events/events/courses-and-workshops/2021/normic-imaging-workshop-course-in-advanced-light-m.html**
DANDRITE	**Introduction to Fluorescence Microscopy** *Currently planning a physical course in Aarhus for 2021*	**7 June 2021**	**3.6 ECTS**	**https://au.phd-courses.dk/CourseCatalog/ShowCourse/662**
DANDRITE	**CryoNet Workshop**	**1 November 2021**	**TBC**	**2021 information: https://events.au.dk/3rd-cryonet-symposium**
NCMM	**PhD Course in Molecular Medicine,** 2-week course.	**Fall 2021, 2022 & 2023 (November)**	**10 ECTS**	**2021 programme and format tbc. For reference, 2020 course details available at: https://www.med.uio.no/ncmm/english/news-and-events/events/courses-and-workshops/2020/ncmm-phd-course-in-molecular-medicine-2020.html**

	Format tbc			

Overview of courses planned for 2022

DANDRITE

- Proteomics and Protein Profiling: https://au.phd-courses.dk/CourseCatalog/ShowCourse/628 (January 2022)
- N9 Bionanotools (2021 info): https://phd.nat.au.dk/for-phd-students/courses/scientific-courses/kurser-2021/nanoscience/n9-bionanotools-2021/ (January 2022)

MIMS

Courses will likely follow the 2019 programme from 2022. Most planned for 2021 will not be held online. Example of 2019 courses held:

- 18-20 February (cancelled for 2020): "Basic course in Scanning and Transmission Electron Microscopy" This course covers fundamental theory and operational principles as well as specimen preparation techniques for scanning and transmission electron microscopy (SEM/TEM). 1 ECTS. The course is always oversubscribed and a selection of applications with the best motivation is applied. Our aim is to educate PhD student and postdoc users interested in EM, so they understand how electron microscopy is useful in research, have the knowledge to choose appropriate methods for their projects and get the first hands on contact with instruments.
- 26-28 March 2019: "Cryo-electron tomography 3D reconstruction course" Lectures and computation practical with international teachers and SciLifeLab support.
- 6-10 May 2019: "TEM sample preparation", a one-week full time course on sample preparation, lab work including fixation methods, resin embedding, ultramicrotome sectioning and Focused Ion Beam (FIB)-SEM
- 3-5 June 2019: SciLifeLab "Cryo-Electron Microscopy sample preparation and data collection course". Joint SciLifeLab course, lectures and practical sessions with international teachers and participants.
- 17-19 September 2019: "Basic course in Electron Microscopy". Offered second time during 2018, see above.
- 23-28 September 2019. SciLifeLab course "Cryo-EM single particle reconstruction" organized by Stockholm Cryo-EM lab
- **13-14 November 2019, Advanced microscopy for life sciences in Örebro**

FIMM

Plans for hands-on courses linked to core facilities when travel/physical attendance is possible.

- Drug sensitivity screening
- WES + RNA-seq to identify links between drug sensitivity/resistance and changes in exomic/transcriptomic profiles
- Single cell unit and high content imaging, working together to run genomic/transcriptomic analyses from solid tumour microscopy samples.