

ELIXIR.NO newsletter no 4

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NeLS – Norwegian e-infrastructure for Life Science

We develop, operate, and support NeLS, the Norwegian e-infrastructure for Life Science. The system allows users to store, share, and analyse bioinformatics data sets. Tools and pipelines for tasks like differential gene expression, variant calling, and taxonomic classification are already available, and new methods are added on a regular basis. Data uploading and management can be done through a dedicated web portal. Analysis functionality is provided through linked instances of the Galaxy system – a popular bioinformatics workbench. You can log in to NeLS at nels.bioinfo.no using your regular university account (through Feide), or else obtain a NeLS-specific user account. NeLS is in active use by more than 400 users and in close to 50 projects.

Regular user workshops – and online training

We are running user workshops in Bergen, Oslo, Tromsø and Trondheim – to aid users in utilizing NeLS, including the Galaxy workbench with analysis workflows, as well as the TSD (Tjenester for Sensitive Data) system. The workshops are popular and often fully subscribed within hours after they have been announced. Information on up-coming workshops is available at www.bioinfo.no (training tab). We are also making available short videos showing how particular tasks can be done within NeLS and the associated Galaxy workbench – these are also available at the same web site.

Cooperation with sequencing platforms and with NorStore

We have a tight collaboration with the major national infrastructures for sequencing (Norwegian Sequencing Centre, NSC, and NCS-PM, the National Consortium for Sequencing and Personalized Medicine) and also with several local sequencing facilities. The aim is to provide a streamlined high-quality service to end-users. Samples are sent to the sequencing facility that performs the sequencing and uploads the data to NeLS, where the user can get access to it and share it with other project members. Within NeLS the users can also process the data using ready-made workflows. For sensitive data, data are instead uploaded to TSD – where analysis tools and workflows are also available. Our NeLS system is integrated with the NorStore storage solutions provided by Sigma2 – giving users access to large storage facilities. NorStore provides for-free long-terms storage through their archive system. We also aid users in submitting their data to international repositories (such as European Nucleotide Archive – ENA – and Array Express).

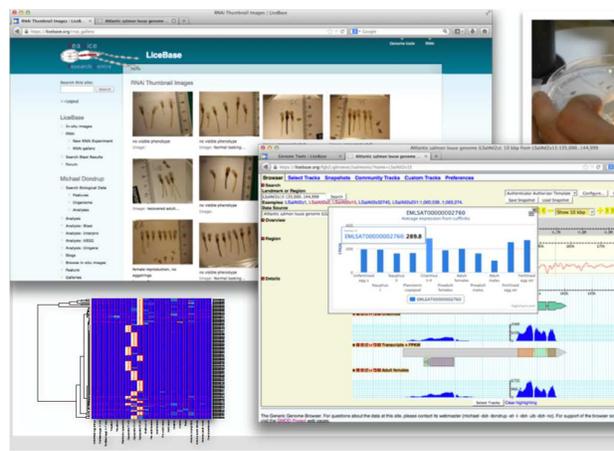


The Nordic Tryggve project for handling sensitive bioinformatics data

Through the Tryggve project, supported by NeIC (Nordic e-Infrastructure Collaboration - <https://neic.nordforsk.org/>) the Nordic ELIXIR nodes (Denmark, Finland, Norway and Sweden) work to establish a Nordic platform for collaboration on sensitive data. All countries have established solutions for sensitive data, and in the Tryggve project we work to connect these and make them more easily usable for life science researchers in our countries. The Tryggve project is also followed closely by other ELIXIR Nodes, since handling and sharing of sensitive data is a challenge for all ELIXIR countries. Among Tryggve deliverables are tools to transfer data between the national systems and exploitation of container technology (primarily Dockers) for porting bioinformatics analysis workflows from one computer system to another, e.g., from Mosler to TSD or from NeLS to TSD. Using the Docker technology, a tool or a workflow can be packaged up together with all the libraries and files it depends on, making it quick and easy to get it running on the new system.

LiceBase - licebase.org

LiceBase is a species focused genome database for *L. salmonis* – salmon louse. The database contains the genome with annotated genes, overlaid expression data (based on RNA-seq experiments), and a set of RNAi experiments – each knocking out a gene of interest – including pictures to capture phenotypic consequences of the knock-out. LiceBase has been developed within the Sea Lice Research Centre (SLRC - www.slrc.no) – a centre for research based innovation (SFI), focused on increasing the biological understanding of sea lice and finding new ways of controlling them in order to deal with the problems they are causing for both aquaculture and wild fisheries in Norway and elsewhere.



ELIXIR internationally – 20 countries on board

Germany joining ELIXIR in August 2016 was an important milestone for the infrastructure. Also of particular interest for ELIXIR Norway, professor Rein Aasland (since January 2017 at University of Oslo) has been elected as the chairman of the ELIXIR board for 2017.

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