

de.NBI Quarterly Newsletter

EDITION MAY 2017

1) EDITORIAL

Dear de.NBI members, dear de.NBI followers,

The new edition of the de.NBI Quarterly Newsletter provides you the essentials on the recent development and the future activities of the German Network for Bioinformatics Infrastructure (de.NBI). In recent months, the integration of Germany and the de.NBI into the European life-sciences infrastructure for biological information ELIXIR has made tremendous progress. The German Node Application submitted by the Federal Ministry of Education and Research (BMBF) has been approved by the ELIXIR Board and de.NBI/ELIXIR Germany members already participated in ELIXIR calls for implementation studies and the selection of core data resources.

At the national level the legal integration of the de.NBI partner projects into the network has been implemented by signing a new collaboration agreement between the 30 universities and research institutes participating in the de.NBI initiative. The term 'NEW' is also reflected in the three contributions describing the designation of chairpersons of the Special Interest Groups (SIGs), the position 'de.NBI cloud governance' at the administration office and the bioinformatics services provided by scientists at Kiel University, which is the first 'Associated Partner' of de.NBI. This newsletter also addresses the 2nd International de.NBI Symposium as an upcoming major event, the de.NBI Twitter channel and future training activities of the de.NBI consortium. A list at the end of this newsletter shows the training courses and workshops planned for the coming months.

The de.NBI Administration Office hopes you enjoy reading this new edition of the de.NBI Quarterly Newsletter and that we touch upon some interesting topics for you.



A. Tauch
(Head of de.NBI Administration Office)

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2) NODE APPLICATION GERMANY APPROVED BY THE ELIXIR BOARD



The integration of the de.NBI consortium into the European life-sciences infrastructure for biological information ELIXIR has made tremendous progress in recent months. The **ELIXIR Node Application Germany**, which is the legal basis for providing ELIXIR services in Germany, has been reviewed by the ELIXIR Scientific Advisory Board and it has been unanimously **approved by the ELIXIR Board** during the meeting in Utrecht, 25th April 2017. According to a decision by the Federal Ministry of Education and Research (BMBF) the German ELIXIR Node will make use of the established structures and administrative measures of the 'German Network for Bioinformatics Infrastructure (de.NBI)'. The national node is therefore composed of the eight existing service centers that provide high-quality bioinformatics services for life-sciences research and it is guided by the de.NBI network coordinator Alfred Pühler, who in future will also act as Head of Node. The next step to formalize the full membership of Germany and de.NBI in ELIXIR is the signing of the collaboration agreement between the ELIXIR Hub and the lead entity of the German ELIXIR Node. This process is currently managed by the de.NBI Administration Office and the legal advisors of ELIXIR. After de.NBI got this contract signed all members of ELIXIR Germany have to compile the service delivery plan of the national ELIXIR node.

3) IMPLEMENTATION STUDIES TO INTENSIFY THE COLLABORATION WITH ELIXIR

The ELIXIR work plan for the year 2017 includes resources to bring new nodes, such as Italy, Germany, Luxembourg and Ireland in closer contact with ongoing ELIXIR activities. During a telephone conference in February 2017, ELIXIR Germany was informed that the ELIXIR Hub will spend 200,000 EURO to finance implementation projects in Germany. Following the dissemination of this information within de.NBI, finally, four topics were identified and proposed to ELIXIR. The titles of these projects as well as the names of project leaders can be taken from the accompanying list. In the meantime, the proposed Implementation Study Plan of ELIXIR Germany was checked by ELIXIR. In particular, it is of importance for ELIXIR that the proposed projects will be carried out in collaboration with members of other ELIXIR nodes. Evidently, this is the case for the German projects and therefore ELIXIR Germany is looking forward to starting the 12-months Implementation Studies in September 2017.

The proposed Implementation Projects of ELIXIR Germany.

Name of project leader	Title of Implementation Project
Frank Oliver Glöckner Jacobs University Bremen	Contextual data enriched submission of microbial ribosomal DNA sequences to the European Nucleotide Archive for integrated data analysis.
Uwe Scholz IPK Gatersleben	Integration of plant genomics and phenomics data services: Connection to the ELIXIR authorization infrastructures, harmonization of standards for high throughput phenotyping data and registration of plant phenotyping experiments.
Björn Grüning, Rolf Backofen Freiburg University	Establishing a sustainable infrastructure for software deployments in ELIXIR
Steffen Neumann , IPB Halle; Oliver Kohlbacher , Tübingen University	Automated cloud-based processing of metabolomics data from the MetaboLights archive

4) THE CONTRIBUTION OF de.NBI TO ELIXIR CORE DATA RESOURCES

The **ELIXIR Core Data Resources** are defined as a set of European data resources that are of fundamental importance to the broad life science community and the long-term preservation of biological data. At the end of last year, ELIXIR invited the national nodes to submit proposals for candidate resources to be included into the selection process for ELIXIR Core Data Resources. Therefore, ELIXIR Germany asked the de.NBI network for support and submitted the following two proposals:

- Dietmar Schomburg, Braunschweig, proposed the database **BRENDA** that was founded in 1987 and represents the world's main information site for enzyme-ligand related information (www.brenda-enzymes.org).



- Frank Oliver Glöckner, Bremen, proposed the database **SILVA** that constitutes a comprehensive online-resource for quality-checked and aligned ribosomal RNA sequence data (www.arb-silva.de).



Altogether, 26 applications were submitted by the ELIXIR nodes. In the meantime, the Head of Nodes group and the ELIXIR Scientific Advisory Board reviewed these proposals in face-to-face meetings. A final decision which proposals will be accepted as ELIXIR Core Data Resources, is expected until end of June 2017.

5) NEW de.NBI CONSORTIUM AGREEMENT SIGNED BY ALL PARTNERS

The de.NBI consortium was expanded in November 2016 by the so-called de.NBI partner projects to provide bioinformatics services in areas of life science research that were not covered by the initial network activities, for instance bioimaging, epigenetics and lipidomics. As a result of the respective BMBF call, eight proposals for partner projects, comprising 17 German research groups, have been selected by an international reviewer board. The legal integration of the new partners and scientists into the network was implemented in May 2017 with the final signature of **the new de.NBI consortium agreement** by the University of Bremen. All project heads of the partner projects previously signed a specific framework agreement to approve their rights and obligations within the network. The integration of the de.NBI partner projects results in the following key figures of the network: **de.NBI is composed of 39 service projects lead by 39 PIs and located at 30 national universities and research institutes.**

6) NEW CHAIRPERSONS FOR de.NBI SPECIAL INTEREST GROUPS

Special Interest Groups (SIGs) are subcommittees of the Central Coordination Unit (CCU) focusing on various topics relevant for operational and strategic decisions within de.NBI. SIGs provide recommendations to the CCU. Since autumn 2016 the CCU has instituted two new Special Interest Groups to address two new fields of activity within the network, namely, the ELIXIR cooperation and the de.NBI cloud efforts. The chairs of the new SIGs 6 and 7 have been elected by the CCU. Simultaneously the co-chairs for SIGs 1, 3 and 5 have been newly occupied which could improve the gender balance in de.NBI management tasks.

The seven Special Interest Groups and their chairpersons

SIG	Title	Chairperson	Co-chairperson
SIG 1	Communication and outreach	J. Stoye	F. Sprengel
SIG 2	Service and service monitoring	F. O. Glöckner	U. Scholz
SIG 3	Training and education	O. Kohlbacher	D. Wibberg
SIG 4	Infrastructure and data management	M. Eisenacher	W. Müller
SIG 5	de.NBI development	A. Pühler	U. Kummer
SIG 6	de.NBI cloud	C. Lawerenz	A. Sczyrba
SIG 7	ELIXIR cooperation	A. Goesmann	H. Gundlach

7) NEW POSITION: de.NBI CLOUD GOVERNANCE

With the extension of the de.NBI spectrum with a distributed de.NBI cloud, a new staff position was set up in the Administration Office to deal with the de.NBI Cloud Governance.

The de.NBI Cloud Governance is responsible for all administrative and technical tasks regarding the establishment of a centralized governance system for the de.NBI cloud. The main task of the de.NBI Cloud Governance is the development of a portal, which connects compute centers affiliated with de.NBI network. The portal represents a central access point to all de.NBI compute resources. Furthermore, he is managing de.NBI Cloud project applications and the corresponding assignment of a project to a specific compute center.

Since April **Peter Belmann** is working in the position of the de.NBI Cloud Governance. He is a bioinformatician experienced in different cloud computing technologies like OpenStack and Amazon Web Services. In the context of the CAMI (Critical Assessment of Metagenome Interpretation) project, he developed a framework for the distributed benchmarking of virtualized bioinformatics software in the cloud.



Peter Belmann

Two of his first tasks are to enable the ELIXIR AAI as the authentication and authorization method for the de.NBI cloud and the identification of technical requirements in order to establish the de.NBI cloud.

8) KIEL UNIVERSITY JOINS THE de.NBI AS ASSOCIATED PARTNER

BY MARC HÖPPNER

Kiel University recently joined the de.NBI as one of its first “**associated**” partners, a novel status for external, independently funded projects that complement existing efforts within the German Network for Bioinformatics Infrastructure. The groups from Kiel - represented through **Marc Höppner, David Ellinghaus and Tal Dagan** - are adding three new services and workshops to our growing bioinformatics family: support for assembly and annotation of animal genomes, genome-wide association studies (GWAS), and microbial phylogenetics and comparative genomics. A key focus of the contributions from Kiel is to provide practical support and training for researchers interested in establishing new competences in their groups or use of the existing experience and infrastructures in Kiel through collaborations. Marc Höppner, head of the bioinformatics platform at the **Institute of Clinical Molecular Biology (IKMB)**, has strong expertise in conducting *de-novo* genome projects, having been involved in over 10 eukaryotic genomes to date, with several more in various stages of completeness. David Ellinghaus, co-head of the bioinformatics platform at the IKMB, is a Juniorprofessor at the IKMB with expertise in statistical genetics and complex disease phenotypes and in designing and performing genome-wide genotyping studies. Tal Dagan runs a group for microbial genomics; her team has in-depth experience in conducting evolutionary analysis of prokaryotic genomes using a range of experimental and informatics approaches.

The new associated partner node in Kiel provides access to a range of infrastructures, including **one of the largest academic Next-Generation Sequencing (NGS) and genotyping centers in Germany**, specialized hardware for the assembly of large genomes but also detailed hands-on experience in a range of bioinformatics applications. For more information, you can check the de.NBI webpage and learn how to get in touch with the Kiel node to discuss your project ideas and needs.

9) THE 2ND INTERNATIONAL de.NBI SYMPOSIUM IN OCTOBER 2017

The **2nd International de.NBI Symposium „The Future Development of Bioinformatics in Germany and Europe”** will take place at the Center for Interdisciplinary Studies (ZIF), Bielefeld University, from 23 until 25 October 2017. The symposium will focus on the tight collaboration between de.NBI and ELIXIR. In the opening session Niklas Blomberg, director of ELIXIR, will present the goals of ELIXIR and its interaction with the de.NBI network. The consecutive sessions will cover topics like **Proteome and Metabolome Bioinformatics, Cloud Computing, Microbial Bioinformatics, Plant Bioinformatics, Human Bioinformatics, Data Resources and Data Management, as well as RNA Bioinformatics and Galaxy**. A special highlight of the symposium will be the Distinguished Symposium Lecture of Barend Mons from Leiden University, Netherlands. Since Barend Mons is head of the High Level Expert Group for the European Open Science Cloud (EOSC), his talk will focus on the development of the EOSC project. Furthermore, the symposium also offers a poster session, where contributions of young bioinformaticians are expected. It should be mentioned that poster abstracts will be used to select interesting ones for oral presentations.

On the last day of the symposium, the **de.NBI Plenary Meeting 2017** will be held in the afternoon of 25 October. The main purpose of this plenary meeting is the discussion the decisions of the reviewer panel

for the last two of the de.NBI. Just as a reminder, the de.NBI plenary meetings are official meetings, where all de.NBI members are expected to participate.

10) FOLLOW US ON TWITTER



#denbi is active and successful via @twitter since October 2016. The de.NBI profile name is @denbiOffice and displays more than 270 followers and 725 tweets now. In future, we will use the channel to announce and document training courses, to announce #denbi events, and for all news related to #denbi, e.g. @ELIXIREurope news and news tweeted by #denbi partners or tools like @HITStudies or @OpenMSTeam. So if you are interested in latest #denbi news follow us on @twitter and use our tags #denbi @denbiOffice.

11) de.NBI TRAINING 2017

The first months of 2017 were very successful in the field of 'de.NBI training'. In total, 21 de.NBI training courses took place until May. Altogether, more than 550 applications have been filed and about 500 scientists participated in the training courses. The largest course was attended by 43 participants, the smallest one by five scientists. About 75% of the participants were PhD students or Postdocs. The remaining 25% were PIs, undergraduates, and participants from industry. The courses were attended by 59% men and 41% women. About 20% of the participants came from outside Germany. The feedback on the quality of the training courses showed a high degree of participants' satisfaction (>85%). In 2017, de.NBI intends to reach more than 1000 participants in the training program. Currently, 24 additional training courses are fixed for 2017 and 16 courses are in preparation. (<http://www.denbi.de/index.php/training-courses>). Highlights of the de.NBI training program 2017 will be the summer schools in Gießen and Berlin.

12) UPCOMING EVENTS

The calendar of upcoming events lists a number of events scheduled for the next months. All offers are accessible via the de.NBI homepage <http://www.denbi.de>. The de.NBI training program is continuously updated on our homepage. Currently more than 39 courses are in the pipeline for the rest of 2017.

MAJOR de.NBI EVENTS - SAVE THE DATES

- **de.NBI Summer School “Cloud Computing for Bioinformatics” (25 June - 01 July 2017), Gießen.** The de.NBI Cloud locations are offering an extraordinary de.NBI summer school on various aspects of cloud computing hosted at Justus-Liebig-University Gießen. Application deadline is 5 June 2017. See <http://www.denbi.de/22-training-cat/training-courses/256-cloud1>
- **de.NBI Midterm Review (18-19 September 2017), Berlin.** In accordance with the funding regulations, the consortium will be evaluated in September 2017. All PIs are asked to present a poster on 18 September 2017. Service center coordinators and SIG chairs will also give oral presentations. This meeting has already been announced in the de.NBI QNL March 2017.
- **de.NBI Summer School “Computational Genomics and RNA Biology” (25-29 September 2017), Berlin.** The summer hosted at the Max-Delbrück Center for Molecular Medicine school combines theoretical introductions and practical exercises in NGS and Galaxy tools for NGS, statistics for RNAseq, ChIP and ChIPseq, and RNA structure. Application deadline is 1 July 2017. See <http://www.denbi.de/22-training-cat/training-courses/278-de-nbi-summer-school-computational-genomics-and-rna-biology>
- **2nd International de.NBI Symposium “The Future Development of Bioinformatics in Germany and Europe” and de.NBI Plenary Meeting 2017 (23-25 October 2017), Bielefeld.** The symposium will focus on fields in which de.NBI and ELIXIR plan to interact. The conference will take place at the Center for Interdisciplinary Research (ZiF) at Bielefeld University.



OVERVIEW OF UPCOMING de.NBI EVENTS

Date	Event	City	Organizer
➤ 07-09 Jun 2017	3rd Genomics training course	Gießen	BiGi
➤ 11-16 Jun 2017	CSAMA 2017 - Statistical Data Analysis for Genome Scale Biology	Bressanone/ Brixen	HD-HuB
➤ 18-24 Jun 2017	Fiji Developer Training (Learnathon)	Dresden	CIBI
➤ 19-20 Jun 2017	Software Carpentry Workshop Berlin	Berlin	HD-HuB
➤ 25 Jun-01 Jul 2017	de.NBI Summer School - Cloud Computing for Bioinformatics	Gießen	BiGi, CIBI, RBC, HD-HuB, Bio- Infra.Prot
➤ 26-28 Jun 2017	Introduction to Linux and Version Control	Heidelberg	HD-HuB
➤ 27 Jun 2017	Special CCU-SAB meeting	Berlin	CAU
➤ 28 Jun 2017	Advanced customisation of a Galaxy instance	Montpellier	RBC Freiburg
➤ 28 Jun 2017	Galaxy for Proteomics	Montpellier	RBC Freiburg
➤ 28 Jun 2017	Galaxy for Training & Education	Montpellier	RBC Freiburg
➤ 28 Jun 2017	How to analyze metagenomic and amplicon data in Galaxy	Montpellier	RBC Freiburg
➤ 29 Jun 2017	BIMSB Galaxy Course - using Galaxy for RNA-seq analysis	Berlin	RBC Berlin
➤ 18 Jul 2017	11. CCU Meeting	Bielefeld	CAU
➤ 03-05 Jul 2017	3rd de.NBI Bioimage Analysis Workshop	Heidelberg	HD-HuB
➤ 26-28 Jul 2017	Introduction to Python programming	Heidelberg	HD-HuB
➤ 06 Aug 2017	COMBINE Tutorial - Modelling and Simulation Tools in Systems Biology - ICSB	Blacksburg	de.NBI-SysBio
➤ 21-25 Aug 2017	Deep Learning with Keras	Dresden	CIBI
➤ 12-13 Sep 2017	Stoichiometric and kinetic modeling of biochemical networks using CellNetAnalyzer and COPASI	Heidelberg	de.NBI-SysBio
➤ 18-20 Sep 2017	Tutorials @ GCB	Tübingen	tbd
➤ 18-22 Sep 2017	4th Galaxy high-throughput sequencing (HTS) data analysis workshop	Freiburg	RBC
➤ 20-29 Sep 2017	de.NBI, DAIS & KNIME Hackathon	Konstanz	CIBI
➤ 25-29 Sep 2017	de.NBI Summer School - Computational genomics and RNA biology	Berlin	RBC
➤ 25-27 Sep 2017	PLANT 2030 Summer School - Basic Bioinformatics training for Biologists	Gatersleben	GCBN

IMPRESSUM:

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