

de.NBI Quarterly Newsletter

EDITION AUGUST 2016

1) EDITORIAL

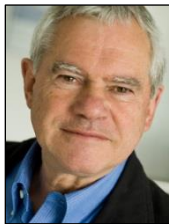
The de.NBI Quarterly Newsletter Edition August 2016 reports on a series of important de.NBI developments. The highlight of the last three months was without doubt the ratification of the ELIXIR Consortium Agreement by the German Ministry of Education and Research (BMBF). With this step the de.NBI network is asked to prepare a node application comprising the structure of the German ELIXIR node as well as the service and training activities offered on a European level. Thus de.NBI has reached one of its most important goals namely the internationalization of its tasks.

Another important step forward in the de.NBI development was the announcement of the BMBF to solve the hardware problems of the service centers by establishing a so-called de.NBI cloud. The Central Coordination Unit of de.NBI became active and decided that service centers with experience in cloud computing should get involved in establishing a de.NBI cloud which is considered to represent a future-oriented compute structure.

The de.NBI network will be significantly enlarged by integrating partner projects into existing service centers. In order to discuss this integration and also to analyze the service and training work of the service centers the de.NBI coordinator together with the head of the de.NBI administration office started to visit the centers. These visits turned out to be rather successful and they were also used to discuss the future developments of de.NBI.

In order to improve the visibility of the de.NBI network, a series of publications will be prepared during the coming months. It is planned to produce a de.NBI flyer containing the general information on the network, a de.NBI brochure describing the structure and organizations of de.NBI, and a de.NBI special issue in a scientific journal summarizing the research work of the bioinformatics groups involved in de.NBI.

The main goals of de.NBI are providing services and training to users to solve the big data problem in life sciences. However, this can only be achieved if de.NBI members are aware of ongoing research in their field of expertise. Therefore, de.NBI is organizing annual symposia and workshops on relevant research topics. The de.NBI scientific meetings of the current year are reported in this newsletter. Last but not least, this Quarterly Newsletter informs on all training courses until the end of this year and also on upcoming events like the Scientific Advisory Board and Plenary Meeting in Berlin.




A. Pühler (de.NBI coordinator)

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2) GERMANY JOINS ELIXIR

Since August 2016 Germany is full member of the European life-sciences infrastructure for biological information, ELIXIR (www.elixir-europe.org). The Federal Ministry of Education and Research (BMBF) signed the ELIXIR Consortium Agreement establishing Germany as member no. 20 of the distributed infrastructure that unites Europe's leading life science organizations. During a meeting of the G7 Science Ministers in 2015, ELIXIR was nominated as a world-leading infrastructure that is vital for enabling the life sciences to derive maximum knowledge and understanding from biological, medical and environmental "Big Data". In the future ELIXIR will play a key role in linking global data resources.

The German Network for Bioinformatics Infrastructure (de.NBI) has been designated by the BMBF to establish the German node in ELIXIR by providing high-quality bioinformatics services and training expertise to the scientific user community in Europe. The German ELIXIR node will be guided by the de.NBI coordinator Alfred Pühler, acting in future also as Head of Node (HoN). The executive team is complemented by the Technical Coordinator Rolf Backofen (RBC, University of Freiburg) and the Training Coordinator Oliver Kohlbacher (CIBI, University of Tübingen). Scientific delegates to the ELIXIR Board are Roland Eils (HD-HuB, Heidelberg University and German Cancer Research Center) and Alexander Goesmann (BiGi, Giessen University). The ELIXIR Board is the highest decision-making body of the ELIXIR consortium and consists of scientific and administrative representatives from each member state or member institute.



The integration of de.NBI into the ELIXIR consortium as a national node is the final step of a collaboration strategy established previously between the ELIXIR director Niklas Blomberg and the de.NBI coordinator Alfred Pühler (see Newsletter Edition February 2016). The next step to further formalize the membership of Germany in ELIXIR is the submission of the ELIXIR Node Application by the member state. All project partners of the de.NBI consortium are currently preparing this document which is the legal basis for providing ELIXIR services in Germany.

Additional information is available from the press releases by the BMBF (<https://www.bmbf.de/de/damit-der-datenfluss-nicht-ins-stocken-geraet-3250.html>), ELIXIR (<https://www.elixir-europe.org/news/germany-joins-elixir>), and de.NBI (via Bielefeld University) (http://ekvv.uni-bielefeld.de/blog/pressemitteilungen/entry/vereinte_kompetenz_f%C3%BCr_big_data).

The new homepage for ELIXIR Germany is available at: <https://www.elixir-europe.org/about/elixir-germany>

3) GREEN LIGHTS FOR THE ESTABLISHMENT OF A de.NBI CLOUD

In a series of discussions the de.NBI network came to the conclusion that the establishment of a de.NBI cloud would help to solve the serious hardware problems of the de.NBI service centers. This aspect was also the topic of a cloud workshop organized at the DKFZ, Heidelberg, in April 2016. Following this workshop, the de.NBI reviewer panel supported the de.NBI view and sent a letter to the BMBF asking for immediate financial support. The BMBF took up this proposal and announced that altogether up to 5 Mio. Euro and in addition six positions for scientists will be provided to establish a de.NBI-specific cloud. This proposal was highly welcomed by de.NBI and discussed at the last meeting of the CCU in Tübingen with the following result: The de.NBI cloud will be established at the service centers BiGi in Bielefeld and Gießen, HD-HuB in Heidelberg, RBC in Freiburg, and CIBI in Tübingen. Further on, the scientific personnel will be distributed mainly to the service centers involved in establishing the de.NBI cloud. It should be mentioned that the service centers involved are currently extremely busy to initiate the cloud establishment since the financial support provided has to be spent until December 2016. Together with the service centers, the de.NBI coordinator hopes that within the next three months the procurement of the cloud equipment can successfully be accomplished.

4) VISITS TO de.NBI SERVICE CENTERS



RBC service center Kick-off meeting in July 2016

On a summer tour the de.NBI service centers GCBN in Gatersleben, BioInfra.Prot in Bochum, RBC in Freiburg, and NBI-SysBio in Heidelberg were visited by the de.NBI coordinator A. Pühler and the head of the de.NBI administration office A. Tauch. During these visits the service centers organized meetings where all project partners, including the new partner projects, met to discuss service and training aspects of the de.NBI network. Both visitors enjoyed getting a complete overview of all the activities within the service centers. In particular, they met for the first time the project leaders of the different partner projects which offi-

cially will join de.NBI on 1 November 2016. The visits were also used to plan coming de.NBI events, e. g. the symposium, the SAB and plenary meeting this year as well as the midterm review next year. Immediately after the summer break the visits will be continued with meetings with the service centers BiGi in Bielefeld, CIBI in Tübingen, the Database Node in Braunschweig, and HD-HuB in Heidelberg.

5) de.NBI COMMUNICATIONS

Several communication projects have been started to enhance the visibility of the de.NBI network. First of all a de.NBI flyer containing all essential information on de.NBI will be produced. In addition, a comprehensive de.NBI brochure is planned where each service center with all its current and designated project partners will get space to introduce their service and training activities. The de.NBI brochure is intended to be available shortly before the Scientific Advisory Board meeting 28-29 November 2016 in Berlin. There is also the plan to produce a special issue on the scientific background of the de.NBI network in the Journal of Biotechnology. In this special issue de.NBI project leaders shall get the opportunity to contribute mini reviews on research where their specific bioinformatics tools help to analyze big data sets generated in life science experiments. The articles in this special issue will be peer reviewed and therefore constitute original papers. The deadline for submitting mini reviews will be January 2017. The publication of the Special Issue will be in August 2017, just before the midterm review of de.NBI.

6) de.NBI MINI SYMPOSIUM "BIOINFORMATICS FOR METAGENOME ANALYSIS"

The Center for Biotechnology (CeBiTec) of Bielefeld University organized the 11th CeBiTec Symposium entitled "Microbial Genomics and Metagenomics in Human Health and Disease" from July 4-6 2016. The themed symposium highlighted the impact of the genomics revolution on medical microbiology. The programme was structured around plenary lectures, short oral presentations, an evening poster session and two distinguished lectures. Jörg Hacker (President of the German Academy of Sciences Leopoldina – National Academy of Sciences) gave a talk about "Antibiotics and Antibiotics Resistances: Scientific and Social Implications". Peer Bork's (EMBL Heidelberg) presentation was about "My Gut Microbes and Me: A Long-Term, yet Fragile Relationship".

The last day of the symposium was organized by the German Network for Bioinformatics Infrastructure (de.NBI). The mini symposium entitled "Bioinformatics for Metagenome Analysis" focused on human microbiomes. Peer Bork (HD-HuB, EMBL Heidelberg) and Alexander Sczyrba (BiGi, Bielefeld University) co-chaired two highly interesting sessions about „Bioinformatics Tools for Analyzing Metagenome Sequences“ and „Human Microbiomes in Health and Disease“. Invited speakers of the de.NBI mini symposium were Bjørn Nielsen (TU Denmark/DK), Marc-Emmanuel Dumas (Imperial College Lon-

don/UK), Dirk Haller (TU München/DE), Daniel Huson, (Tuebingen University/DE), and Georg Zeller (EMBL Heidelberg/DE).

The symposium at Bielefeld University was attended by about 90 participants from Germany and Europe. The conference dinner took place at a typical Westphalian restaurant providing a pleasant environment for further scientific discussions.



Participants in the de.NBI mini symposium "Bioinformatics for Metagenome Analysis" in Bielefeld

7) de.NBI SUMMER SCHOOL 2016 "FROM BIG DATA TO BIG INSIGHTS"

The de.NBI summer school 2016 "From Big Data to Big Insights" will take place in Dagstuhl Castle (Wandern) from 26-30 September 2016 and has the aim to provide participants deeper insights into the details of algorithms or software systems in proteomics and metabolomics. In total, 20 participants from Germany and Europe were selected based on their application letters.

Participants will learn to use existing tools to analyze and visualize real-world and own datasets. Beyond that, they will be put into a position to be able to combine their own existing and future algorithms or tools with other solutions as well as to integrate them into a sustainable software system. To this end, the summer school will also contain hackathons to quickly prototype novel tools.

Keynote speakers of the de.NBI summer school 2016 will be Oliver Serang (Institute of Computer Science Metagenomics, FU Berlin), Jürgen Cox (Max Planck Institute of Biochemistry, Martinsried), Juan Antonio Vizcaino (EMBL-EBI, Hinxton), Sebastian Böcker (Chair of Bioinformatics, Friedrich-Schiller-Universität Jena), Lennart Martens (Department of Biochemistry, Ghent University), Samuel Payne (Pacific Northwest National Laboratory, Richland), George Rosenberger (Institute of Molecular Systems Biology, ETH Zürich) and Viktoria Dorfer (School of Informatics, Communications and Media, FH Upper Austria). de.NBI speakers are Stefan Albaum (BiGi Bielefeld), Robert Ahrends (BioInfra.Prot Dortmund), Martin Eisenacher (BioInfra.Prot, Bochum), Michael Berthold (CIBI, Konstanz) and Oliver Kohlbacher (CIBI, Tübingen).

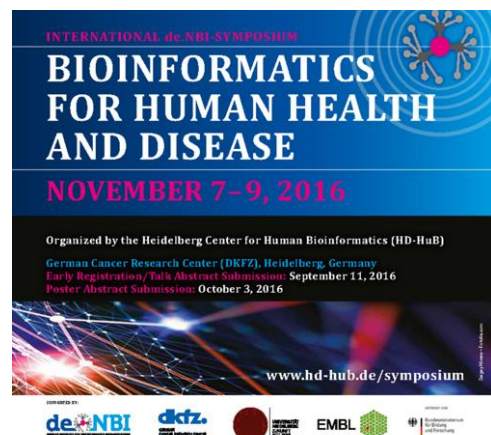
<http://www.denbi.de/index.php/news/100-lss2016-2> or <https://goo.gl/ZRgxuV>

8) de.NBI-Symposium "Bioinformatics for Human Health & Disease"

The first International de.NBI Symposium will feature the topic of "Bioinformatics for Human Health and Disease" and will be hosted and organized by the Heidelberg Center for Human Bioinformatics (HD-HuB). The symposium will be held on November 7-9, 2016 at the German Cancer Research Center (DKFZ) in Heidelberg.

The topics include:

- Clinical genomics
- Human microbiomes in health and disease
- Integrative omics analyses
- Systems biology
- Epigenetics
- Functional annotation and understanding of normal and cancer genome variants
- Bioimage informatics of cellular and tissue model systems
- Bioinformatics as a service in biomedical research
- Collaborative development and interoperability



In addition the symposium will feature the German membership of ELIXIR.

Early registration and talk abstract submission until 11 September 2016. Poster abstract submission until 3 October 2016. Further information and registration is available at the symposium homepage: <http://www.denbi.de/index.php/events/172-international-de-nbi-symposium-bioinformatics-for-human-health-and-disease>

9) 2ND SAB MEETING AND PLENARY MEETING

The second **meeting of the de.NBI Scientific Advisory Board (SAB)** will take place at the Seminaris Campus Hotel Berlin (www.seminaris.de/berlin) from 28–29 November 2016. This major event includes the 3rd **de.NBI Plenary Meeting**. It brings together the members of the international SAB and the de.NBI community and will provide an overview of all activities and recent achievements in de.NBI. The poster session will allow the meeting participants to get a shared understanding of the de.NBI services and training activities offered by the single projects of de.NBI. The SAB meeting will kick-off with a report on the development in the current year and presentations about the core topics service, training, infrastructure and data management followed by talks about the eight de.NBI Service Centers. The second day will focus on the 3rd de.NBI Plenary Meeting with reports of the coordinator and the administration office (AO) and presentations of the new partner projects.

[Draft Agenda of the 2nd SAB Meeting and Plenary Meeting, 28-29 November 2016 in Berlin](#)

Monday, 28 November 2016		
12:00	Registration	Internal SAB meeting
13:00	Session I: Development of the network – Report of the coordination unit – Overview of services, training, infrastructure, data management	
15:30	Session II: Achievements of the service centers	
19:30	Session III: Poster session of all de.NBI projects	
Tuesday, 29 November 2016		
9:00 - 12:00	Internal SAB meeting	
9:00 - 12:00	Session IV: 3 rd Plenary Meeting – Reports of Coordinator and AO – Presentations of the new Partner Projects	
14:00	End of conference	

10) de.NBI TOOLS REGISTERED IN BIO.TOOLS

One of the first benefits of the collaboration with ELIXIR for de.NBI has been to become involved in the bio.tools project. Hosted by ELIXIR Denmark the ELIXIR tools and data services registry is a comprehensive collection of both scientific and technical information about analytical tools and data services. What makes bio.tools such a powerful tool is the use of the EDAM ontology for its resource description model. In summary the tools and services are presented in a highly consistent way. From types of data, data identifiers, and data formats to operations and topics - bio.tools knows it all.

Since January 2016 about 50% of all de.NBI tools can be found in the registry. Already way before the official membership of Germany in ELIXIR, both de.NBI and ELIXIR joined forces for a "de.NBI EDAM Codefest" organized by Björn Grüning (RBC) in Freiburg. While this Hackathon focused on the annotation of de.NBI services, it also featured many exciting talks and presentations illustrating the broader efforts of bio.tools.

Currently ELIXIR Denmark is working on the next stable release candidate of the registry which will provide more ways to list services that previously could not be included in bio.tools. Another key-feature will be the introduction of sub-domains, which will allow mapping the internal structure of de.NBI even closer to the bio.tools registry. <https://bio.tools/>

11) UPCOMING EVENTS

The calendar of upcoming events lists a number of events scheduled for the next six months. All offers are accessible via the de.NBI homepage <http://www.denbi.de>. The de.NBI training programme is continuously updated on our homepage.

MAJOR de.NBI EVENTS - SAVE THE DATES

- **de.NBI Symposium “Bioinformatics in Human Health and Disease” (7-9 November 2016), Heidelberg.** Lead by HD-HuB the de.NBI Symposium 2016 focused on human bioinformatics is open for the public and de.NBI members. <http://www.denbi.de/index.php/events/172-international-de-nbi-symposium-bioinformatics-for-human-health-and-disease>
- **2nd SAB meeting including Workshop and Plenary Meeting, (28-29 November 2016), Berlin.** This internal de.NBI Meeting for all de.NBI members will take place at the Seminaris Campus Hotel, Berlin. The invitation has been spread within the consortium.

de.NBI TRAINING COURSES

The main training and education event is the

- **de.NBI Summer School 2016 - From Big Data to Big Insights (26-30 September 2016), Schloss Dagstuhl (Wadern)** which is fully sponsored by de.NBI. <http://www.denbi.de/index.php/news/100-Iss2016-2> or <https://goo.gl/ZRgxuV>

In the next three months de.NBI staff will offer 20 training events. Descriptions of the courses can directly be accessed via the summary below.



OVERVIEW OF UPCOMING de.NBI EVENTS

	Date	Event	City	Organizer
➤	29 Aug-2 Sep	Targeted and Untargeted Metagenome Analysis	Bielefeld	BiGi
➤	12 Sep 2016	Cloud Computing Tutorial	Berlin	BiGi
➤	12 Sep 2016	Label-free quantification using OpenMS and workflows	Berlin	CiBi
➤	12-23 Sep 2016	Computational genomics approaches to precision medicine	Berlin	RBC, MDC
	13-16 Sep 2016	Assembly of bacterial Genomes - a de.NBI teaching event at Black Forest Summer School 2016	Herzogenhorn	BiGi
	16 Sep 2016	ICSB2016 Tutorial: Modelling and Simulation Tools in Systems Biology	Barcelona	NBI-SysBio
➤	19-21 Sep 2016	Software Carpentry Workshop	Heidelberg	HD-HuB
➤	19-23 Sep 2016	2nd Galaxy Workshop on HTS data analysis	Freiburg	RBC
➤	21-23 Sep 2016	9th OpenMS User Meeting	Tübingen	CIBI
➤	21-23 Sep 2016	2nd Genomics training course	Gießen	BiGi
➤	26-30 Sep 2016	de.NBI Summer School 2016- From Big Data to Big Insights	Schloss Dagstuhl (Wadern)	BioInfra.Prot, CIBI, BiGi
➤	26-30 Sep 2016	Summer School: RNA-Seq	Leipzig	RBC
➤	28-30 Sep 2016	Data Interpretation of RNASeq and Bisulfite Sequencing Data in Cancer Research	Heidelberg	HD-HuB
➤	11-12 Oct 2016	Course on Microscopy Image Analysis	Heidelberg	HD-HuB
➤	12-13 Oct 2016	Introduction to BRENDA	Braunschweig	Database Node
➤	13-14 Oct 2016	Data Interpretation of Whole-Genome and Exome Sequencing Data in Cancer Research	Heidelberg	HD-HuB
➤	18 Oct 2016	8th CCU-Meeting in Gatersleben	Gatersleben	CAU, GCBN
➤	19-21 Oct 2016	Big Data Training Course in Plant Genomics	Gatersleben	GCBN
➤	2 Nov 2016	Introduction into the bacterial diversity metadatabase BacDive	Braunschweig	Database Node
➤	7-9 Nov 2016	de.NBI Symposium “Bioinformatics in Human Health and Disease	Heidelberg	HD-HuB, CAU, others
➤	21 Nov 2016	Differential analysis of proteomic data using R	Bochum	BioInfra.Prot
➤	22-25 Nov 2016	From Primer to paper: Training in Biodiversity Analysis using NGS Amplicon Data	Bremen	Database Node
➤	28-29 Nov 2016	2nd SAB meeting including workshop and plenary meeting	Berlin	CAU

IMPRESSUM:

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For questions and remarks please address to contact@denbi.de

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