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**UNIVERSITÄT  
BERN**

Faculty of Science

**Competence Network  
Digitalization (CND)**

Bern, 20 January 2020

## **Competence Network Digitalization (CND) of the Faculty of Science**

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### Annual Report 2019

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# 1 Summary

The Faculty of Science decided in March 2019 to finance the Competence Network Digitalization (CND) within the framework of its strategic funds until the end of 2020. The CND is an association of individuals, research groups and institutes of the Faculty of Science that are involved in digitalization in research, teaching, continuing education and services. On the one hand, the CND networks all interested parties within the Faculty of Science and is involved in the implementation of the planned university-wide digitalization strategy. On the other hand, the CND organizes workshops on specific topics and questions in order to launch concrete projects and useful digital services. The CND also provides the Faculty of Science visibility in digitalization topics and increases networking within the University of Bern, and with the business community and government agencies.

## 2 Activities in 2019

### 2.1 Response of the Faculty of Science on the digitalization strategy of the University Executive Board

As a first activity, the CND coordinated the drafting of the response of the Faculty of Science to the digitalization strategy of the University Executive Board (Unileitung). For this purpose, feedback was obtained from all five departments of the Science Faculty, analysed and compiled into a consolidated statement of the Faculty. At the end of April 2019, a five-page response was sent to the Executive Board.

### 2.2 Discussions with digitalization representatives in June 2019

Prof. Dr. Oscar Nierstrasz and Dr. Matthias Stürmer held four meetings with members of the Faculty of Science and digitalization representatives of the other faculties.

Members of the Faculty of Science:

- Prof. Dr. Johanna Ziegel, Institute of Mathematical Statistics and Actuarial Science
- Prof. Dr. Christiane Tretter, Mathematical Institute
- Ulrich Linden, Institute of Geological Sciences
- Prof. Dr. Kevin Heng, Center for Space and Habitability (CSH)
- Dr. Rémy Bruggmann, Interfaculty Bioinformatics Unit
- Prof. Dr. Natalie Banerji, Department of Chemistry and Biochemistry

Digitalization representatives of the other faculties:

- Prof. Dr. Stefan Münger, Institute of Jewish Studies, Faculty of Theology
- Prof. Dr. Silke Adam, Institute of Communication and Media Studies, Faculty of Business, Economics and Social Sciences
- Prof. Dr. Mirjam Eggen, Institute for Civil Law, Faculty of Law
- PD Dr. Katja Schlegel, Institute of Psychology, Faculty of Human Sciences
- Prof. Dr. Michael Stolz, Institute of Germanic Languages and Literatures, Faculty of Humanities
- Prof. Dr. Gertraud Schüpbach, Veterinary Public Health Institute, Vetsuisse Faculty
- Prof. Dr. Raphael Sznitman, ARTORG Center for Biomedical Engineering Research, Faculty of Medicine

Central Administration:

- Sandro Stauffer, Head of Staff of the Central Administration and responsible for the digitalization strategy of the University of Bern

Following the interviews, a five-page document was produced and sent to all persons involved. It presents the activities and needs for digital services within the Faculty of Science and possible new digital services of the CND. It also lists the actors within the university regarding digitalization and summarizes possible interest in an interdepartmental Competence Center for Digital Transformation (CDT).

## 2.3 Website of the CND established

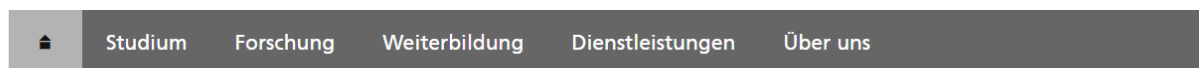
A first version of the CND website [www.cnd.philnat.unibe.ch](http://www.cnd.philnat.unibe.ch) went online in July 2019. It offers an overview (in German) of the digitalization activities within the Faculty of Science in the areas of study, research, continuing education and services:

1. **Home:** News about the activities of the CND and upcoming events
2. **Study:** Which lectures on digitalization topics are offered within the Faculty of Science?
3. **Research:** Who carries out research in the Faculty of Science on which digitalization topics? Presentation of research projects, results etc.
4. **Further education:** What further education is available in the Faculty of Science on digitalization topics?
5. **Services:** Who at the Faculty of Science offers which digital services? Presentation of services, reference projects, previous "customers" etc.
6. **About us:** Background information about the competence network, the people behind it, the management, partnerships etc.

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## Phil.-nat. Kompetenznetzwerk Digitalisierung (CND)



Das Phil.-nat. Kompetenznetzwerk Digitalisierung (CND - Competence Network Digitalization) ist ein Zusammenschluss von Personen, Forschungsgruppen und Institute der Phil.-nat. Fakultät, die sich mit der Digitalisierung in der Forschung, in der Lehre, in der Weiterbildung und bei Dienstleistungen beschäftigen. Das CND wurde im April 2019 mit strategischen Mitteln der Phil.-nat. Fakultät geschaffen.

Das CND vernetzt einerseits alle interessierten Stellen innerhalb der Phil.-nat. Fakultät und engagiert sich dabei in der Umsetzung der

## 2.4 Survey on digitalization services and needs at the Faculty of Science

In order to gather information about the current digitalization activities and needs within the Faculty of Science, a survey in German and English was sent to the faculty members and the mid-level faculty (Mittelbau) in August. The survey consisted of 11 questions regarding current lectures and research activities as well as needs related to digitalization. A total of 22 people filled out the questionnaire. The results showed, among other things, that there is a need for information and coordination in the area of research data storage and that there is a demand for programming courses. In addition, the survey helped to attract numerous interested parties to the CND.

Umfrage zu Angeboten und Bedürfnissen bezüglich Digitalisierung an der Phil.-nat. Fakultät der Universität Bern

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UNIVERSITÄT  
BERN

Sprache: 

Deutsch

Umfrage zu Angeboten und Bedürfnissen bezüglich Digitalisierung an der Phil.-nat. Fakultät der Universität Bern

Sehr geehrte Damen und Herren

Das Phil.-nat. Kompetenznetzwerk Digitalisierung (CND - Competence Network Digitalization) will Personen, Forschungsgruppen und Institute der Phil.-nat. Fakultät vernetzen, die sich mit der Digitalisierung in der Forschung, in der Lehre, in der Weiterbildung und bei Dienstleistungen beschäftigen. Das CND wurde im April 2019 mit strategischen Mitteln der Phil.-nat. Fakultät geschaffen und hat damit eine Finanzierung vorerst bis Ende 2020 erhalten.

Mit dieser Umfrage möchten wir nun einen gesamtheitlichen Überblick über die Digitalisierungsaktivitäten und Bedürfnisse an der Phil.-nat. Fakultät der Universität Bern erzielen. Basierend auf Ihren Rückmeldungen aus dieser Umfrage werden wir im HS 2019 mehrere Folge-Workshops organisieren um die genannten Themen und Fragestellungen zu vertiefen. Ausserdem möchten wir mit Ihren Antworten die [neue Website des CND](#) ergänzen.

Wir möchten Sie bitten, die Umfrage **bis am Sonntag, 29. September 2019** auszufüllen.

Vielen Dank für Ihre wertvollen Rückmeldungen!

Freundliche Grüsse,

[Prof. Dr. Oscar Nierstrasz](#), [Dr. Matthias Stürmer](#) und [Dr. Jasmin Nussbaumer](#)  
Koordination Phil.-nat. Kompetenznetzwerk Digitalisierung

Was ist gemeint mit "Digitalisierung"?

Im Gegensatz zu "Digitisierung", bei der bestehende Prozess und Dokumente auf digitale Medien übertragen werden, umfasst der Begriff "Digitalisierung" eine ganzheitliche Betrachtung aller Veränderungen und Einflüsse, die durch die wachsenden technischen Möglichkeiten von Software und Daten sowie die digitale Vernetzung von Menschen und Maschinen entstehen.

## 2.5 Digital Day 2019 with presentations from the University of Bern

As part of Digital Day 2019 in Bern, the CND organised several talks in the Generation House by representatives of the University of Bern, who presented their research activities related to digitalization. The speakers were Daniel Probst and Prof. Dr. Jean-Louis Reymond with the presentation "Active ingredients in Virtual Reality", Dr. phil. Tobias Krieger on "Internet-based interventions for mental disorders: Opportunities and Challenges" and Prof. Dr. Torsten Braun on "Evolution of Mobile Networks from 4G via 5G to 6G".



## 2.6 Workshop on Research Data Storage

As requested in the survey feedback, the CND organized a workshop on Research Data Storage on November 1, 2019. All participants of the survey as well as the digitalization representatives of the other faculties were invited. In the end, about 30 people took part (see below).



After a detailed introduction, Michael Rolli from the IT Services Office of the University of Bern (ID) presented the latest developments regarding research storage in connection with high performance computing. The ID now offers research data storage for researchers for 60 CHF per terabyte and year. A total net capacity of almost 3.5 petabytes of storage is available.

Dirk Verdicchio from the University Library of Bern (UB) then presented the activities of the BORIS Research Data and Research Data Support. From 2020 the University Library of Bern (UB) will offer an institutional repository for research data based on the open source software DSpace. Researchers will be able to publish 1 terabyte of research data per person and year free of charge, and can be cited via metadata.

Finally, Sebastian Sigloch and Ann Harding from SWITCH presented the new SWITCHcoldstor range and other services for universities. From 2020, SWITCHcoldstor will offer 1 terabyte of storage space for CHF 65-85 per year.

As a result of the discussion that followed, a list of activities that could be pursued next with regard to Research Data Storage was created. These are regular meetings for further exchange of experience and information, formulation of common concerns, and problems for the University Executive Board, announcement of current services and activities as well as guidance on what is technically and legally possible with regard to Research Data Storage.

Participants of the workshop:

- René Bleisch, Department of Chemistry and Biochemistry
- Yannick Blum, Institute of Cell Biology
- Torsten Braun, Institute of Computer Science
- Rémy Bruggmann, Interfaculty Bioinformatics Unit
- Olga Churakova, Dean's Office, Faculty of Humanities
- Romaine Farquet, Dean's Office, Faculty of Human Sciences
- Simon Grimm, Center for Space and Habitability (CSH)

- Ann Harding, SWITCH
- Sigve Haug, Science IT Support (ScITS)
- Tobias Hodel, Digital Humanities, Faculty of Humanities
- Tosso Leeb, Institute of Genetics
- Ulrich Linden, Institute of Geological Sciences
- Stefan Münger, Institute of Jewish Studies
- Oscar Nierstrasz, Institute of Computer Science
- Jasmin Nussbaumer, Institute of Computer Science
- Katie Peichel, Institute of Ecology and Evolution
- Michael Rolli, IT Services Office
- Katja Schlegel, Institute of Psychology
- Sebastian Sigloch, SWITCH
- Raphael Sznitman, ARTORG
- Michael Stolz, Institute of Germanic Languages and Literatures
- Matthias Stürmer, Institute of Computer Science
- Thomas Tschannen, Vetsuisse Faculty
- Dirk Verdicchio, University Library Bern

## **2.7 Programming courses at the Faculty of Science**

Also following the results of the survey, CND representatives had several discussions with Sigve Haug of ScITS and Korinna Esfeld, representative of the Faculty of Science, Study Committee, concerning programming courses at the Faculty of Science. At the moment talks are underway within the Faculty regarding next steps.

## **2.8 Discussion and outline for the foundation of a Competence Center for Digital Transformation (CDT)**

In the last quarter of 2019, the CND devoted itself to numerous discussions on the establishment of an interfaculty Competence Center for Digital Transformation (CDT). For this purpose, the digitalization representatives of all faculties were contacted again regarding future cooperation. The CND also drew up an initial outline for the creation of the CDT with concrete objectives, activities and structures as well as financing scenarios.

## **2.9 Further presentations and discussions**

In the course of 2019, the representatives of the CND held further discussions and presentations:

- 12 August 2019: Meeting with Markus Brönnimann, new Administrative Director
- 28 August 2019: Meeting with ITS on High Performance Computing (HPC)
- 10 October 2019: First CND Board Meeting
- 18 November 2019: Presentation of the CND at the KID Meeting (Committee for IT Services)
- 19 December 2019: Second CND Board Meeting

### 3 Budget and accounting 2019

The CND finished 2019 within budget. However, the amount of CHF 20'000 was not used, but will be carried over to 2020:

Item	Amount/percentage
Employment Dr. Matthias Stürmer	44%
Employment Dr. Jasmin Nussbaumer (since September 2019, previously Carole Gauch)	20%
Further expenditures (start-up financing for projects, implementation of workshops etc.)	CHF 20'000
<b>Total</b>	<b>CHF 100'000</b>