



Ideas Lab Digital Health Meets Social Needs

17–22 February 2019

SEMINAR HOTEL SCHLOSSPARK MAUERBACH (Vienna, Austria)

Call for Participants for a Five-Day Ideas Lab Focusing on the Challenge

“Digital Health Meets Societal Needs – Transforming Health Systems into a Patient-Centred World”

Closing date for applications: 20 December 2018

1. Introduction

The Ludwig Boltzmann Gesellschaft (LBG) is an independent research institution with a major focus on the fields of medicine, life sciences, humanities and social sciences. With its 21 research units and approximately 550 employees, the LBG promotes academic excellence and world-class research with the aim of generating innovations for society. The LBG is convinced that innovation in research and science is also the result of openness, interdisciplinarity, internationality, and a clear focus on quality. Consequently, since 2014 the LBG has worked intensively on the topic of Open Innovation in Science and founded the Open Innovation in Science Centre.

Open Innovation in Science (OIS) refers to opening up the entire scientific knowledge-acquisition and innovation process – from the definition of the research question to the implementation of innovative solutions. This means that scientific methods are deliberately turned into open, collaborative, and participatory processes, with the clear ambition of creating something new and adding value for society. It is important to understand that the process used to set up the two new Ludwig Boltzmann Institutes for Digital Health will follow OIS principles. Moreover, these institutes themselves will follow OIS methods such as an active and deliberate focus on users (patients, family members, providers, etc.) and be required to include them in their scientific activities. The OIS approach can be described as strongly interdisciplinary and cross-sectoral and shall become manifest in a multifaceted composition of the research teams. This involves persons with creative and/or artistic backgrounds as well as representatives of patients and user groups.

This describes the principles and institutional background of the Ludwig Boltzmann Gesellschaft for addressing the following research challenge: The increase in life expectancy is accompanied by the amplified occurrence of chronic diseases and comorbidities. Due to these factors, in ageing societies the demand for health services already exceeds the capacity of the system. However, restricted resources force the traditionally rigid healthcare system to explore opportunities in digitalisation and patient inclusion. This new era of health care brings new roles to the different players and stakeholders. To meet the expectation of citizens and – at the same time – to relieve the system, traditional hierarchies are challenged to create a level playing field for meaningful collaboration between patients and healthcare professionals and for the allocation of tasks and responsibilities. To achieve this, existing silos have to be abolished and a new ecosystem built that focusses on user-centred solutions and patient safety.

Therefore, the LBG is establishing two separate, seven-year-funded, interdisciplinary Ludwig Boltzmann Institutes for Digital Health with an emphasis on:

Increasing Patient Participation during Diagnosis, Acute and Life-Long Therapy
(*INSTITUTE 1* situated at the University Hospital Salzburg, Austria)

Securing and Enhancing the Quality of Health Services and Patient Safety
(*INSTITUTE 2* situated at Medical University of Vienna, Austria)

In order to facilitate the successful start of excellent research, the LBG hosts an interactive and free-thinking workshop event, called **Ideas Lab**. The aim of the Ideas Lab is to bring together a unique mix of expertise from various disciplines, to form research teams that produce high-quality research proposals. The emphasis will be on an interdisciplinary and cross-sectoral approach to foster new collaborations, to bring new thoughts from different perspectives to the problem and thus encourage innovative approaches to problem-solving. This highly innovative method will encourage the cooperative generation of new ideas and will open possibilities for completely new research constellations and boundary-spanning activities.

During the Ideas Lab, a selected group of researchers and potential contributors with different complementary backgrounds, from a diverse range of disciplines and sectors, will come together to immerse themselves in an inspiring and collaborative thinking process. In the creative environment of the Ideas Lab, new innovative solutions will emerge to address defined research topics. Our aim is to enable researchers to perform research in a more interdisciplinary manner through OIS and, within the Ideas Lab, to develop novel approaches that will have a strong societal impact.

It is expected that, in total, up to EUR 1.3 million (per year, over a period of seven years) will be available for each of the two **Ludwig Boltzmann Institutes for Digital Health**. From this Ideas Lab, a group of **3-4 Principal Investigators** and **1-2 Co-Investigators** will be selected for each of the two institutes. The PI-positions are designated to take the lead in several research programme lines (research groups) within the Ludwig Boltzmann Institute, and they are expected to be strongly committed to their role; they will be offered a full-time employment contract by LBG. They will lead the research of the institute's constituent research groups and are responsible for the recruitment of their further researcher staff. The Co-Investigators will be strongly committed to the institute and can receive funding (for parts of their own position, as well as for hiring an additional predoc researcher) while remaining employed at their current institution. Nonetheless, the Co-Investigators are expected to strongly engage with the Ludwig Boltzmann Institute through regular extended visits, online meetings, collaboration, etc.

The **Ludwig Boltzmann Institutes for Digital Health** will be based at the University Hospital Salzburg (affiliated with Prof. Josef Niebauer, Institute 1) and at the Medical University of Vienna (affiliated with Prof. Harald Willschke, Institute 2). It is expected that the new interdisciplinary Ludwig Boltzmann Institutes will strongly connect to the Austrian and international scientific community and will work closely with key stakeholders such as patients' organisations, professional associations, user crowds, etc.



2. The Research Topics for the Ideas Lab on Digital Health

The Ideas Lab will serve as a catalyst to help researchers from various disciplines generate research proposals within the scope of one of the following two specific research topics.

2.1. Research Topic I

How to support positive health behaviour for cardiovascular disease patients in a sustainable way?

A big part of the entire cardiovascular disease burden of the population is related to a range of unhealthy behavioural risk factors (i.e. unhealthy dietary habits, smoking, physical inactivity). Whereas prevention and rehabilitation programmes lead to meaningful short-term effects, long-term effects are rather disappointing and thus patients' health is not preserved in a sustainable manner. Mechanisms (i.e. motivation, incentives, etc.) behind healthy behaviour and ways in which digital tools can impact secondary prevention in a sustainable way have yet to be discovered. New ways are needed to involve patients in this process to increase the efficacy of intervention programmes. To this end, the healthcare system needs to be more open to increased involvement from the patients' side.

Core Research Questions associated with this research topic:

Relevance to cardiovascular diseases

- **What are the basic links between health behaviour and cardiovascular diseases?**

Incentives for adherence to positive behaviour

- **How can novel, life-long treatment options (e.g. online coaching) be co-designed to consider individual characteristics of real-life situations of patients to achieve sustainable health?**
- **How can mechanism design (e.g. reverse game theory, persuasive design, gamification) be used to affect sustainable, healthy behaviour?**
- **Which incentives support behavioural changes in a sustainable way?**
- **How to use digital tools to find leverage points in the individual patient's situation to gain maximum improvement with the least effort?**
- **How do we design effective media (digital tools and messaging) collaboratively to stimulate and sustain healthy behaviour?**
- **How can the acceptance of preventive technologies by patients and healthcare professionals be increased to support patients' self-determination?**
- **How to increase healthcare professionals' adherence to supporting digital tools to alter behaviour?**

Effectiveness

- **How to quantify / measure the patient outcome in behavioural interventions?**
- **How can self-generated patient data be collected and blended with official health records to provide a complete picture of patients' health status for diagnosis, treatment and care?**
- **How to reduce inequality (vulnerable groups and gender aspect) in patient and caregiver participation?**



2.2. Research Topic II

How to provide digital solutions in health ecosystems, i.e. patients, families, and providers, to deal with patient-safety issues and health literacy in a patient-centric way?

People are becoming increasingly informed about their health. Nonetheless, in order to guarantee patient safety, healthcare professionals need to be trained to address uncertainty among patients and caregivers about complexity, probability, and ambiguity throughout the patient journey. Many of the preventable complications could be avoided using digital solutions to support caregivers and patients by monitoring and optimising treatment strategies in the patient journey. With more efficient knowledge transfer, patients and care givers can be empowered. This requires deep, two-way communication between healthcare professionals and patients, leading to shared and data-assisted decision-making. Additionally, this decision-making can be further supported by personalised recommendations from the available general data. To achieve this, traditional hierarchies have to be modified and patients need to take centre stage amongst the other stakeholders.

Core Research Questions associated with this research topic:

Empowering patients

- **What is the relationship between uncertainty and patient safety in a digital health environment?**
- **How can the patient be guided through the digital system most efficiently?**
- **How can digital tools be applied in such a way that interpersonal contact is not lost?**
- **How can digitisation guarantee values for patients and caregivers (doctors, nurses, social workers, family members, friends)?**
- **How to consider ethical aspects of digitisation and define patient safety from a patient's and caregiver's perspective?**

Empowering healthcare professionals

- **How to empower healthcare professionals to understand and communicate the impact of digital transformation with regard to clinical processes?**
- **How to stimulate the engagement of healthcare professionals with the help of digitalisation to avoid preventable complications throughout the patient journey (intra-/extramural)?**
- **How to develop tools and processes to enhance effective, two-way communication about uncertainty in a digital health environment?**

Assisting decision-making

- **How to support informed and shared decision-making around the patient journey in a digital health environment?**
- **How can collected individual data support system learning on decision-making?**
- **How to translate general to personalised statistics for better patient outcomes?**



3. The Ideas Lab

Participants from a diverse range of professional backgrounds are hereby invited to apply their knowledge, skills and experience across various areas to develop innovative research proposals with the potential to deliver practical solutions for the challenges posed.

The broad aims of the Ideas Lab are to generate research **concepts for the new Ludwig Boltzmann Institutes** which can:

- Address the identified key research questions.
- Facilitate interaction among researchers, users, and patient groups.
- Apply adequate Open Innovation in Science approaches for interaction and research.
- Identify a common language among disciplines.
- Build a better understanding of the problems and research challenges posed and allow these to be framed more clearly.
- Introduce multi-disciplinary perspectives to problems, thus increasing the innovation potential of the research teams.

The Ideas Lab will involve a maximum of 30 applicants as participants. It will be led by the director of the Ideas Lab, who chairs the Ideas Lab and will be supported by a team of mentors. These mentors are experts in the research areas concerned. The director and mentors encourage new ideas by asking questions, highlighting ideas that seem exciting, and making connections between participants as well as between emerging ideas. Furthermore, they will act as independent reviewers, making a funding recommendation on the research proposals emerging from the Ideas Lab.

How will it work?

The Ideas Lab will run over five days, starting late in the afternoon on Sunday, 17 February 2019 and finishing late in the afternoon on Friday, 22 February 2019. The Ideas Lab can be broken down into several stages:

- Defining the scope of the research topics
- Identifying common languages and terminologies amongst people from a diverse range of backgrounds and disciplines
- Sharing understanding of the research topics involved along with the expertise brought by the participants to the Ideas Lab
- Taking part in break-out sessions focussing on the challenges, using creative thinking techniques
- Capturing the output and forming highly innovative research concepts
- Forming research teams consisting of Principal Investigators and Co-Investigators
- Selecting research concepts using "real-time" peer review as well as a validation check

For applicants who will finally be invited to join the Ideas Lab, a preparatory and obligatory Open Innovation in Science webinar will be organised in order to increase awareness and knowledge of the expected inclusion of OIS approaches into the research concepts.

Who is invited to apply?

Invited to apply are researchers with post-doctoral or equivalent experience, as well as other qualified persons with different complementary backgrounds from a diverse range of disciplines and sectors, who feel that they can contribute to both topics, regardless of their disciplinary/professional background. Potential Principal Investigators and Co-Investigators shall have been awarded their first doctor /PhD > 4 and ≤ 14 years prior to



1 January 2019, i.e. doctor's degree/PhD awarded between 1 January 2005 and 31 December 2014 or demonstrate their equivalent experience accordingly.

Potential participants should indicate how their expertise can help address one or both of the defined research topics.

As the Ideas Lab is based on an ethos of innovative collaboration, all applicants must demonstrate both enthusiasm and appropriate personal attributes for multidisciplinary collaborative research. Furthermore, the ability to develop and pursue new OIS approaches will also be a key criterion in selecting applicants.

We emphasise that this Call is open to any discipline and sector but anticipate that it will be of particular interest to those working in the following areas:

- **Medicine and Health Sciences** (*Physicians, Allied Health Professionals (e.g. Nurses, Physiotherapists, Exercise Physiologists, Exercise Scientists), Public Health, Alternative Medicine, Genetics, Molecular Biology, Biochemistry, Immunology, Physiology, Medical Biotechnology, Nutrition, E-Health*)
- **Psychology** (*Developmental Psychology, Clinical Psychology, Psychotherapy, Behavioural Psychology*)
- **Engineering** (*Digital Health Tools, Biomedical Engineering*)
- **Sociology** (*Social Work*)
- **Anthropology** (*Man-Machine-Interaction*)
- **Arts** (*Literature, Music, Philosophy, Theatre, Dance, Film, Performance*)
- **Computer Sciences** and/or Human Computer Interaction (*Artificial Intelligence, Virtual Reality, Biomedical Informatics, Interface Design, Interaction, Design*)
- **Law, Ethics**
- **Media and Communication Sciences**
- **Statistics** (*Biostatistics, Clinical Trial Design, Big Data, Data Science*)

Applicants should not feel limited by conventional perceptions of research performed in this field; the Ideas Lab approach is about bringing together people who would not normally interact. – This is a novel, boundary-spanning opportunity to share ideas and develop future collaborations.

Applying for the Ideas Lab

Applicants are kindly asked to complete the online-application by following this link:

<https://calls.lbg.ac.at/login>

The potential of the applicant's ideas for contributions to one or a set of the research questions posed in this Call will be used to assess the candidate and convince a selection panel that they have the suitable skills and attitude to participate in this Ideas Lab. **The deadline for applications is 20 December 2018.** Applications should be submitted electronically using the link above. Please note that late submissions will not be considered.

Applicants will be informed of their selection for the Ideas Lab event by 17 January 2019. In order to participate, **the applicant must commit to attend the Ideas Lab for its full, five-day duration.** Those selected to attend will receive a further briefing prior to the event. Full details of the venue, how to get there and the accommodation arrangements will be sent to participants once they are confirmed.

All accommodations, refreshments, breakfast, lunch and dinner costs during the event will be covered by the LBG. Applicants selected for participation in the Ideas Lab and who have no opportunity to receive reimbursement from other sources for their trip to Austria are welcome to apply to the LBG for a travel allowance.



Evaluation of Applicants for the Ideas Lab

Applications for the Idea Lab will be assessed by a Selection Panel consisting of the Ideas Lab director who chairs an international and independent team of mentors looking to ensure a mix of disciplines and experience.

Their assessment will be based on the following criteria:

- The ability to develop new, adventurous and highly original research ideas in respect to the research challenges;
- The potential to contribute to research at the interface between disciplines;
- The ability to work in an interdisciplinary setting and as part of a team;
- The ability to involve patients and other user communities in research activities;
- The ability to explain research to non-experts.

It is therefore important to give evidence of your fulfilment of these criteria already in your application. The research proposals themselves will be developed during the Ideas Lab amongst selected participants.

Please ensure that you upload the completed Expression of Interest, as this is the document upon which potential Ideas Lab attendees will be selected.

Please note that because of the large number of applications expected, we will not be able to give individual feedback to unsuccessful applicants.

4. Post Ideas Lab Proposal Assessment

Following the Ideas Lab, the research teams consisting of Principal Investigators and Co-Investigators with the highest potential will be tasked to elaborate on their research concepts together with the host and partner institutions of the Ludwig Boltzmann Institutes for Digital Health and the LBG and develop them into 7-year research plans covering their intended activities as identified at the Ideas Lab as part of the funding application.

The deadline for submission of an elaborated research plan is 15 April 2019. Further guidance on this part of the process will be available during the Ideas Lab event.

The primary criteria used throughout the process of developing and assessing the final proposals will be how adequately proposals address the vision of the Call. We seek to support those that demonstrate:

- Novel, highly multidisciplinary research plans, clearly reflecting the distinctive opportunity for creating such plans that the Ideas Lab provides.
- Clear evidence that the research team has the capability to deliver their project as a high-quality multidisciplinary activity, provided both through the presentation of their joint proposal and their activity during the Ideas Lab.
- Clear relevance to and the potential to make a distinctive and novel contribution towards addressing the research challenges in this area.
- Readiness to include Open Innovation in Science approaches in the proposed research.
- The feasibility of the project and its potential societal impact.

It is planned that final funding decisions will be made by the end of **April 2019**. The potential starting date for the employment contracts with selected PIs and funding contracts with Co-Investigators and their host institutions is May 2019.



5. Key Dates

Call launched	29 October 2018
Ideas Lab registration deadline	20 December 2018
Selection of Participants	17 January 2019
OIS Webinar	end of January / beginning of February 2019
Ideas Lab	17-23 February 2019
Proposal submission deadline	15 April 2019
Funding announcement	end of April 2019

6. Contact Details

If you have any further queries, please get in touch with our Ideas Lab team through Fiete Hofmann at fiete.hofmann@ibg.ac.at