OPEN INNOVATION IN SCIENCE

Ludwig Boltzmann Gesellschaft

RESEARCH GROUPS ON MENTAL HEALTH OF CHILDREN & ADOLESCENTS

A novel approach to form Research Groups

PROCESS DOCUMENTATION

Ludwig Boltzmann Gesellschaft

July 2017

www.ideaslab.lbg.ac.at

Table of Content

Preamble

The Ludwig Boltzmann Gesellschaft (LBG) is an independent research funding organisation with a major focus on the health sciences. With its 18 research institutes and clusters and approximately 600 employees, it conducts world-class research with the aim of generating innovations for society. The LBG is convinced that innovation is also the result of openness, interdisciplinarity, internationality, and a clear focus on quality.

Therefor LBG started the ‘Open Innovation in Science’ initiative with the aim of systematically opening up processes of scientific discovery in an effort to enrich research through new knowledge drawn from beyond traditional disciplinary boundaries. The goal of the ‘Open Innovation in Science’ initiative is to enable scientists and scientific organisations to generate more novel solutions for societal challenges by:

- re-defining research and innovation processes through a cultural shift to work more openly and collaboratively
- creating a culture of sharing, making the entire scientific process more interactive and permeable
- establishing new forms of stakeholder interaction and collaboration
- disseminating and translating scientific knowledge into real-world innovations

Intensifying research that benefits society directly - is the goal of the initiative of the Ludwig Boltzmann Gesellschaft, which is unique in Europe. Science enters into a dialogue with the population and research processes are redesigned.

- Individuals become experts
- Science acquires new insights
- Research develops solutions

For further information on the ‘Open Innovation in Science’ initiative visit www.ois.lbg.ac.at/.

The purpose of this process documentation is to provide a detailed description of the establishment of the Mental Health Research Groups with open innovation methodology applied in each process step.

IN A NUTSHELL

From public engagement to Research Groups

LBG launched an 'Open Innovation in Science' initiative in 2014 aiming to increase research impact through public engagement, inspired by the Harvard Medical School conducted project on the topic of Type 1 diabetes. The crowdsourcing initiative 'Tell Us!' invited the community, consisting of patients, family members, and health care professionals, to generate new research questions in the field of mental health. LBG took up that challenge and announced a research call representing an interactive workshop, known as Sandpit/Ideas Lab, to bring together 30 researchers for a multi-day event, during which researchers are specifically encouraged to think out-of-the box and dissolve disciplinary boundaries. This innovative approach aimed to build interdisciplinary Research Groups that strongly connect with the community. As an outcome of the Ideas Lab, two Research Groups were formed to research and implement solutions on 'Children of mentally ill parents' in the next four years (2018-2021).

This novel multi-disciplinary and community engaging research approach enables innovation potential that is essential for finding novel solutions to tackle societal relevant challenges. Moreover, it secures that the community stays an integral part of research to benefit from applied solutions.

The following chapters provide a detailed description of each step of the novel approach how to form Research Group by engaging with the public.

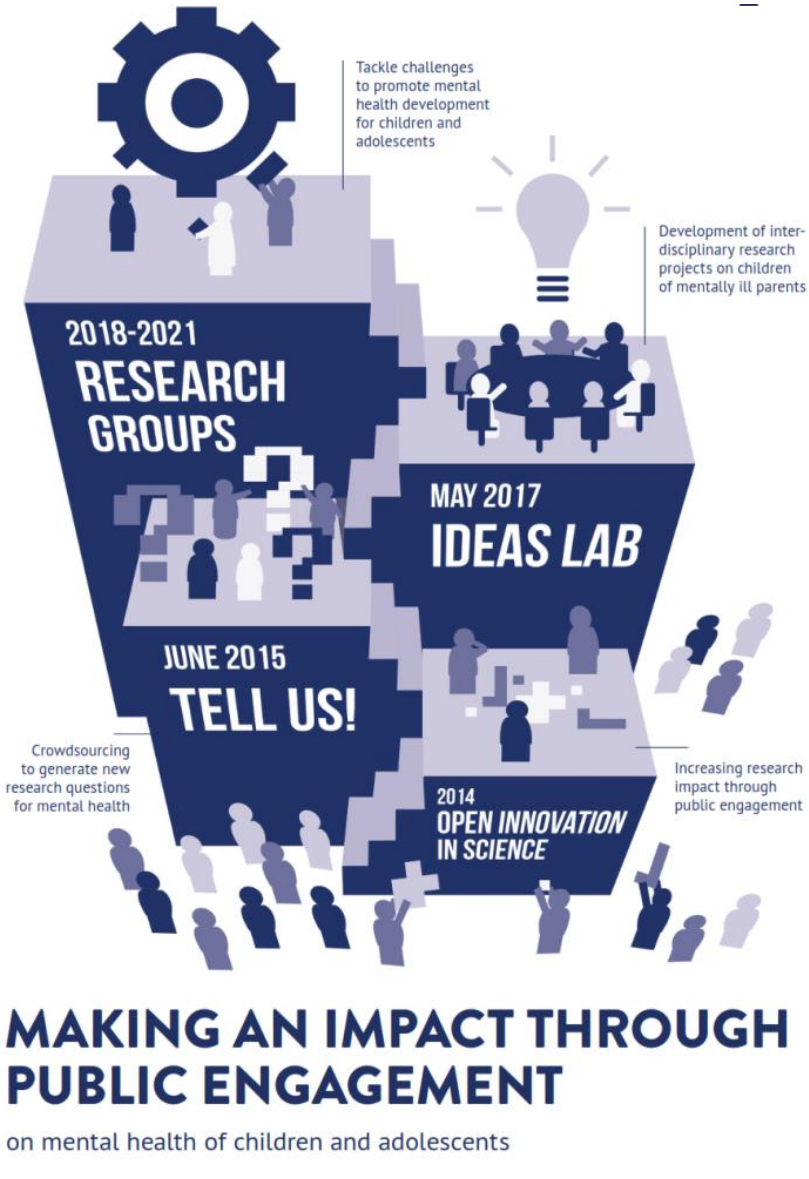

Figure 1. Timeline of the novel approach to form Research Groups with open innovation methodology.

'TELL US!' – CROWDSOURCING RESEARCH CHALLENGES

Community defined research challenges

The aim of the first Open Innovation in Science pilot project, 'Tell us!' was to incite patients, family members and healthcare professionals into generating new research questions in the field of mental health. Thousands of visitors to the specially created online platform from more than 80 countries submitted 400 high-quality contributions.

The active participation and the great interest on the part of the population confirmed the relevance and urgency of the issue of mental illness. It also clearly emerged that the affected individuals, their families and expert carers have extensive knowledge that researchers can tap into, in order to achieve better results that offer direct benefits to society more quickly.

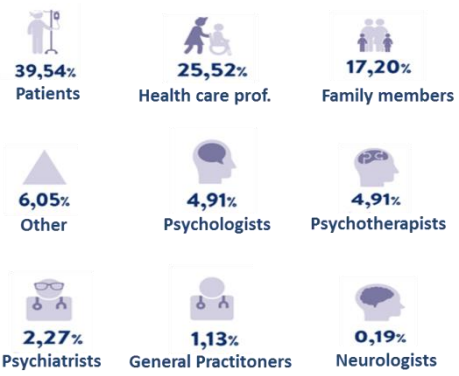

Figure 2. More than 400 high-quality contributions from patients, family members and health professionals shaped the research challenges in 'Tell Us!' crowdsourcing project.

The submissions were analysed and clustered (pattern recognition), and rated by a jury of experts, and then developed into research approaches (see process documentation at www.redensiemit.org). Out of several important topics, securing **mental health for children and adolescents** emerged as a key issue with a strong focus on **children of mentally ill parents**: What steps can be taken to prevent children of mentally ill parents from becoming mentally ill? How could science help to support these families and enable mental resilience? For many of the affected families, therapists and physicians, these are questions of great importance, which will require ground-breaking scientific developments. The factors involved in early identification of children with risk potential are largely unexplored, and an interdisciplinary approach is required for scientific investigation of these new questions (www.ideaslab.lbg.ac.at).

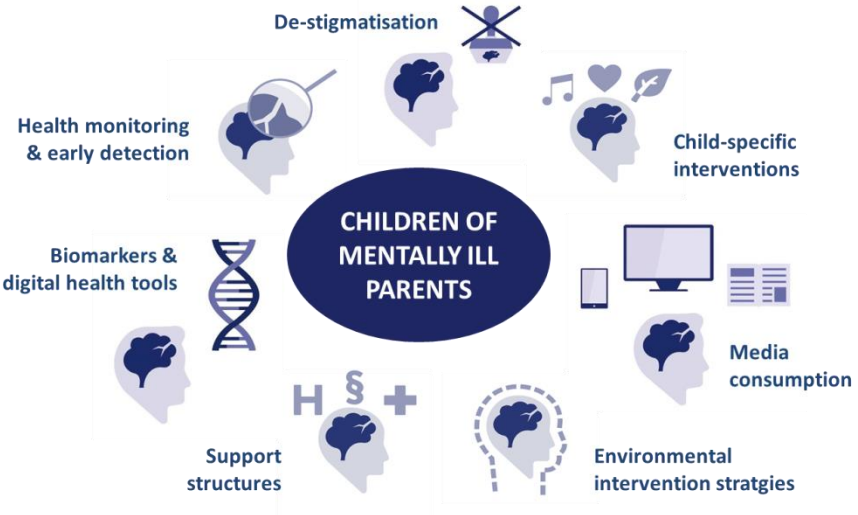

Figure 3. Research challenges in the field of 'Children of mentally ill parents' defined by community as an outcome of 'Tell Us'.

- **What new behavioural and biological biomarkers could be identified** for developing new predictive and preventive measures for children with mentally ill parents?
- **How can new diagnostic tools and Standard Operating Procedures (SOP) accelerate early detection** of mental disorder symptoms in children with mentally ill parents (e.g. using educational institutions; during the treatment of mentally ill parents caring/ involving the children)?
- Which **digital health tools (diagnostic and intervention)** could be designed and where could they be applied in order to help children with parents who are mentally ill?
- **What new environmental intervention strategies could be developed** for mentally ill children (of mentally ill parents)?
- What **new child-specific intervention strategies could be developed** (e.g. trauma therapies for children)?
- How does **media consumption affect mental health** of children with parents having a mental disorder?
- How to **de-stigmatise children** of mentally ill parents?
- How could **individual scientific monitoring** of the health status of children of mentally ill parents be designed?
- What **support structures** should be developed (e.g. sociological, legal frameworks) for mentally ill parents and their children?

FORMING INTERDISCIPLINARY RESEARCH GROUPS

LBG took up the research challenges from the 'Tell Us!' project to form Research Groups that perform interdisciplinary research projects, focusing on mental health for children and adolescents. The Research Groups serve society by potentially taking revolutionary approaches to the complex challenges in this area. The main organisational characteristics of the Research Groups are:

- Scope of the project addressing one or more identified research challenges.
- Max. 3 Mio. Euro over a period of four year duration per Research Group.
- Principle Investigator(s) take(s) the lead role within each Research Group and are expected to be strongly committed to their role and time contribution.
- Co-Investigators are strongly committed to the Research Groups and can receive funding of the Research Group while remaining at their current host institution.
- The Research Group core team, majority of personnel resources, are hosted by Austrian universities.
- Each Research Group consists of one or more PI(s) located in Austria.

How to form interdisciplinary and translational Research Groups

To form interdisciplinary and translational Research Groups a newly developed format, the Ideas Lab, was applied. The Ideas Lab is an intensive, interactive and free-thinking workshop event, where a diverse group of scientists from a range of disciplines come together to immerse themselves in an exciting collaborative thinking process. It aims to bring together a unique mix of expertise from social, biological and life sciences, to form interdisciplinary teams and produce novel high quality research proposals.

Participants from a diverse range of backgrounds were invited to apply their knowledge, skills and experience across disciplinary areas to develop innovative research with the potential to deliver practical solutions to the challenges around mental health for children and adolescents.

The broad aims of the Ideas Lab were to generate **research proposals** which can:

- Build a better understanding of the problems and challenges posed by mental illnesses and allow these to be framed in a clearer way.
- Address the key research challenges that are identified.
- Identify a common language between disciplines.
- Facilitate interaction between key researchers and users and persons concerned.
- Bring in multi-disciplinary perspectives to problems, thus increasing the innovation potential of the research teams.

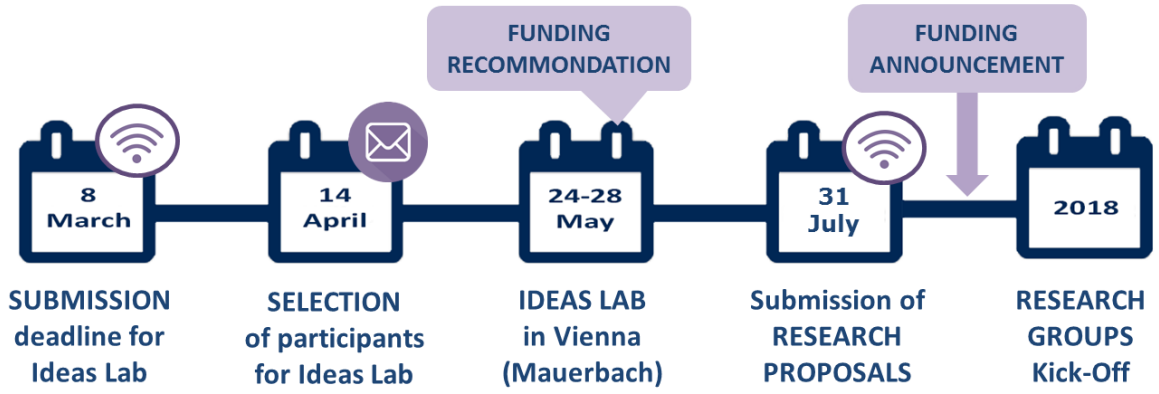

Figure 4. Timeline: from call submission to the kick-off of the Research Group.

SEARCH FOR IDEAS LAB PARTICIPANTS

Who was invited to apply?

Experienced researchers with up to 8 years of post-doctoral experience or equivalent qualifications (Principal or Co-Investigators awarded their first PhD ≤ 8 years prior to 1 January 2017, i.e. after 1 January 2009; or received an equivalent qualification with four years full-time research experience) who feel that they can contribute to one or more of the challenges in this research area, regardless of their disciplinary background, were invited to apply for the participation in the Ideas Lab.

The potential participants were asked to indicate how their expertise can address one or more of the defined challenges. As the Ideas Lab was predicated on an ethos of innovative collaborative working, applicants must demonstrate both enthusiasm and appropriate personal attributes for multidisciplinary collaborative research. Furthermore, the ability to develop and pursue a new approach was also a key criterion in selecting applicants. LBG emphasised that this call is open to any discipline, but anticipated that it will be of particular interest to those working in the following areas:

- **Psychiatry** *(Child and Adolescent Psychiatry, Neuropsychiatry)*
- **Psychology** *(Developmental Psychology, Clinical Psychology, Psychotherapy)*
- **Paediatrics**

- **Neurosciences** *(Biomarkers, Diagnosis)*
- **Sociology** *(Family Studies, Social Work, Child and Adolescent Sociology)*
- **Health Sciences** *(Nursing, Public Health, Alternative Medicine, Genetics, Molecular Biology, Biochemistry, Immunology, Physiology, Medical Biotechnology, Nutrition, E-Health)*
- **Arts** *(Literature, Music, Philosophy, Theatre, Dance, Film)*
- **Computer Sciences** *(Artificial Intelligence, Virtual Reality, Digital Health Tools, Human Computer Interface, Design)*
- **Educational Sciences**
- **Law**
- **Media and Communication Sciences**

How to get the right people to apply?

The partner organisation *winnovation* contacted in total 992 pyramiding contacts that were identified from scientific journals, research networks- and platforms to apply for the open call on Mental Health Research Groups. Thereof, 775 pyramiding contacts were asked to forward the call to interested colleagues acting as multiplicators, and 217 potential candidates were contacted directly via invitation by email and phone.

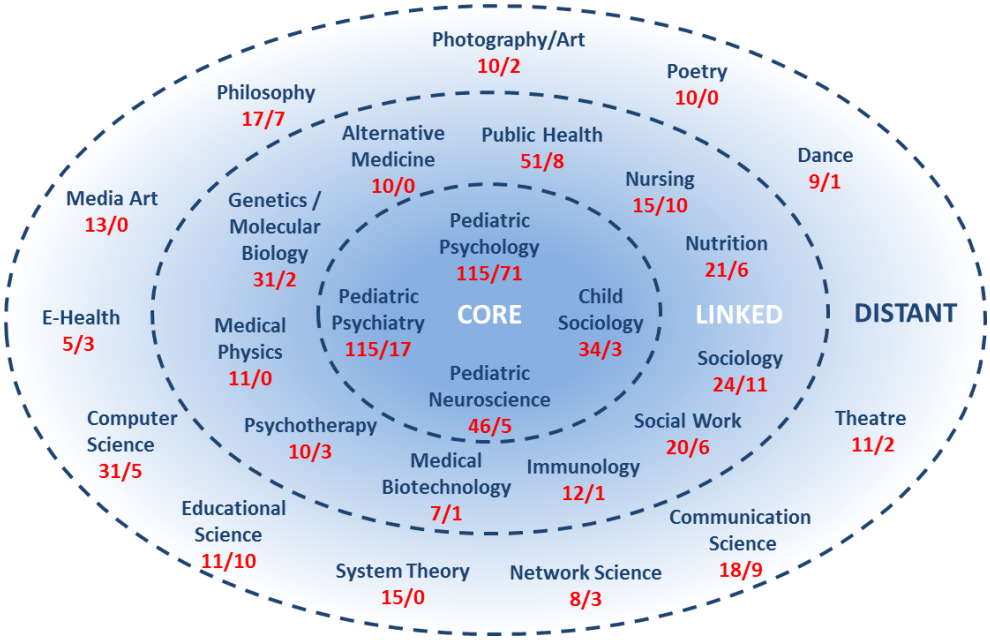

Figure 5. Experienced researchers from the core, linked and distant field were contacted to apply to participate in the Ideas Lab. Numbers indicate potential candidates contacted via pyramiding contacts (multiplicators) / directly contacted candidates (email invitation, phone).

In total a third of candidates were contacted in each area distinguishing between core, linked and distant disciplines working in the field of Mental Health of Children and Adolescents. Potential candidates were distributed among Northern America, Europe, Asia, South Africa and Australia.

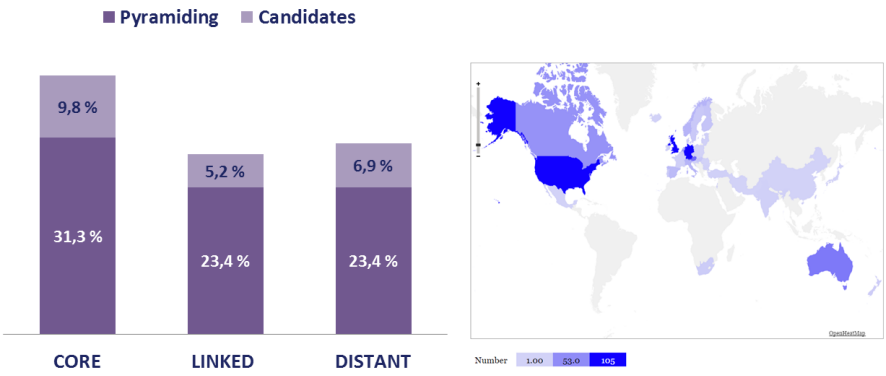

Figure 6. Distribution of pyramiding contacts and potential candidates contacted prior to the Ideas Lab.

Online application questionnaire

Applicants were asked to fill in an application via an online platform (www.calls.lbg.ac.at) consisting of six questions with regard to their background, expertise in the Ideas Lab, and team approach. Space was limited to 200 words for each question, providing a short overview of the personal experience and motivation to participate in the Ideas Lab (in total three pages).

1. Summary of professional background.
2. How do you see your expertise and interests contributing to realising the goal of the Ideas Lab on Mental Health for Children and Adolescents?
3. What is your approach to teamwork?
4. How would you explain your area of interest to individuals with different expertise to your own?
5. How well do you consider yourself suited for the Ideas Lab?
6. What do you hope to gain from participating in this Ideas Lab, personally and professionally?

The call was open from January 17 to March 8, 2017, and distributed among professional networks and announced on several platforms, newsletters, online newspaper and magazines. Additionally, a webinar was held on 15 February 2017 to provide potential candidates more information about the call and the Mental Health research programme.

In total **136 researchers applied** to participate in the Ideas Lab. Thereof, 127 applicants were eligible for further assessment by the evaluators consisting of the mentors, an organisational psychologist and the programme manager. As part of the application, applicants were asked 'How they did you find out about this initiative'. 72% of applicants mentioned that they have been contacted personally or by colleagues. This figure demonstrates the importance of direct communication and distribution of information via existing networks rather than conventional channels.

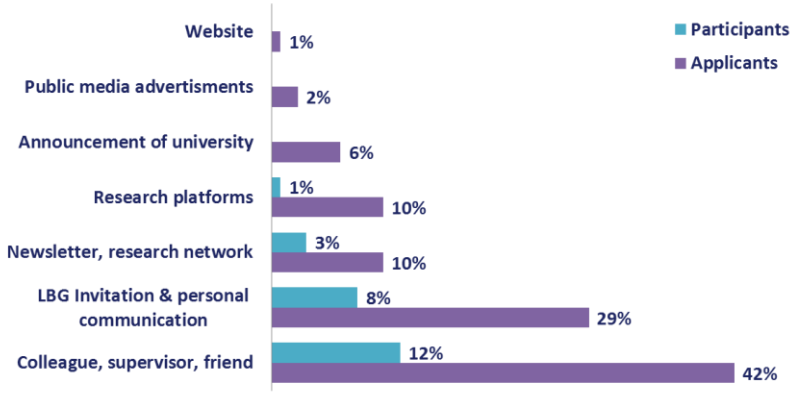

Figure 7. Applicants indicated how they found out about this initiative in the application form.

Selection of Participants

Based on the replies to the six questions in the application questionnaire, always two mentors, an organisational psychologist and the programme manager rated the applications according following criteria after call closure:

Table 1. Scoring guide for the evaluation of applications and selection of participants for the Ideas Lab.

SCORING	SCORING GUIDE
4 - highly promising	**Has all three areas:** • an innovative bent • theme-relevant expertise • positive personal attributes; should bring special value
3 - promising	is strong on **two of the three areas** with an allowable weakness in the third; good promise overall if a little lacklustre in some areas
2 - mixed value	a mixed profile but not without the odd sign of promise
1 - unsuited	a thin or an un-compelling application, or too packed or dense, or self-promoting, showcasing or pre-agenda their primary motive, or too set in their thinking, or they come with a solution, or better suited to the conventional individual-bid route

30 participants (127 applications) have been **selected** based on evaluators' scores and discussion in the online SIFT meeting to ensure a good mix of research quality, disciplines and time commitment: In category A, the highest scientific quality contributions were selected to be invited for the Ideas Lab, where core, linked, and distant disciplines were equally distributed. In category B, good quality contributions were selected that enabled a good mix of disciplines in the Ideas Lab, especially disciplines not represented in category A. Similar, in category C, applications scored 'four' at least by one mentor were considered for further discussion in the SIFT meeting. The SIFT meeting took place online on 14 April 2017, each candidate was discussed and concordantly agreed by all evaluators to be invited for the Ideas Lab. Participants were notified via email to confirm their attendance in the Ideas Lab until 25 April 2017.

Table 2. Categorisation of application based on the average score of the evaluation.

CATEGORY (SCORE)	NUMBER APPLICANTS	PROCEDURE	SELECTED PARTICIPANTS
A (> 3,5)	18	**highest quality contributions**, suggested to be invited for the Ideas Lab	17 participants (4 PI, 13 CoI)
B (2,75-3,33)	38	candidates **to be discussed** in the selection meeting due to their disciplines & role	12 participants (4 PI, 8 CoI)
C (< 2,5)	71 (9)	excluded from discussion, however, those **scored 4 by at least one mentor** might be considered **for discussion**	1 participants (1 CoI)
TOTAL	**127**		**30 (8 PI, 22 CoI)**

Potential candidates, applicants and selected participants were distributed internationally across four continents: Europe, America, Asia, and Australia. Researchers from 28 countries applied for the call, thereof 30 participants from 15 countries were invited to the Ideas Lab, and 13 participants from 9 countries were recommended for funding (grantees). The grantees were distributed among following disciplines: 46% of participants represented

disciplines of the core field (psychiatry, psychology, and neuroscience), 23% of the linked field (sociology and health sciences), and 31% of the distant field (arts, computer sciences, economics).

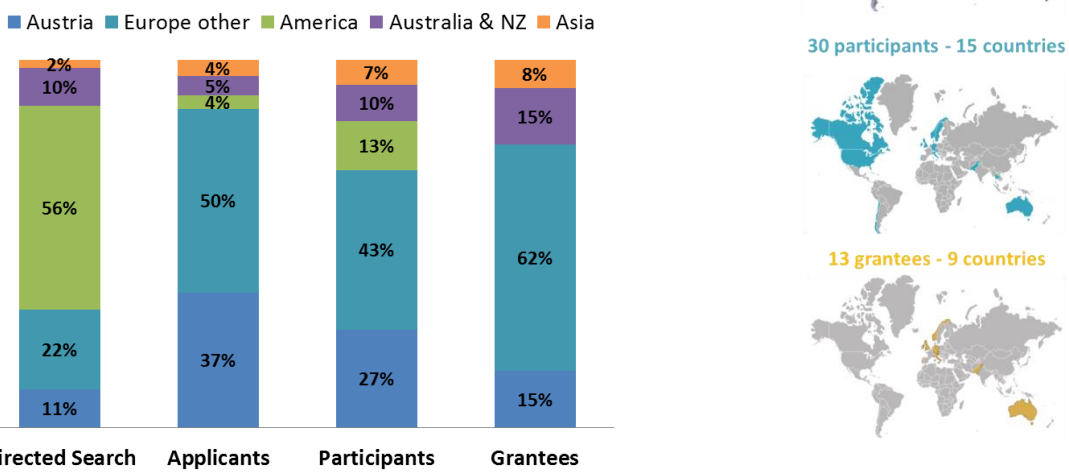

Figure 8. Geographic distribution of potential candidates in the direct search, call applicants, and selected participants, and grantees in the Ideas Lab.

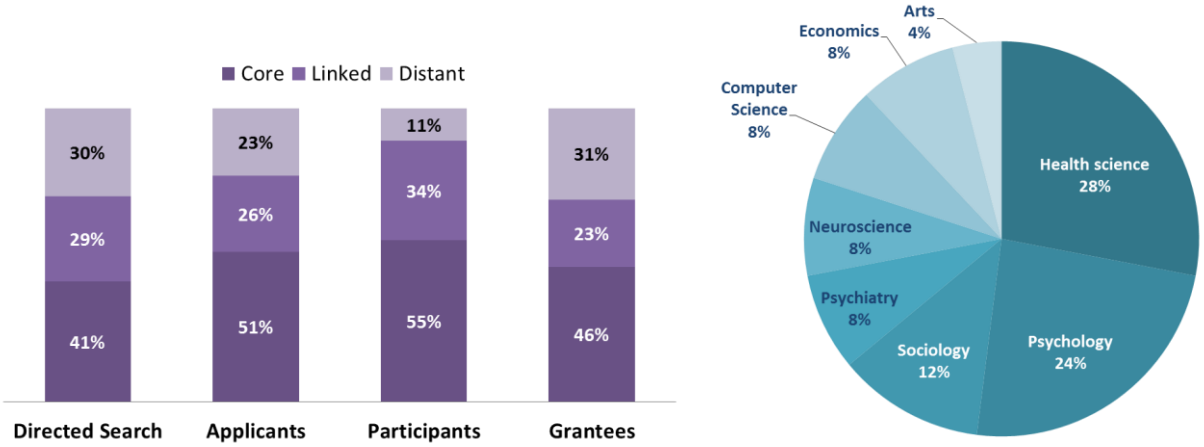

Figure 9. Distribution of disciplines in core, linked, and distant field analysed for potential candidates of the direct search, applicants, participants, and grantees. The diagram (blue) represents disciplines of selected participants recommended for funding (grantees).

Prior to the Ideas Lab event, selected participants were invited to engage at the *Hub* (https://hub.ki/), a social platform, to foster communication and interaction among the participants, mentors, and organisers, which was provided by the facilitators *Knowinnovation*. The Hub contained important information and announcements for participants, and offered space for open discussions, uploading research articles and to get in touch with the assigned buddies. During the Ideas Lab, the Hub was used for communication to participants, e.g., providing a template for the final presentation.

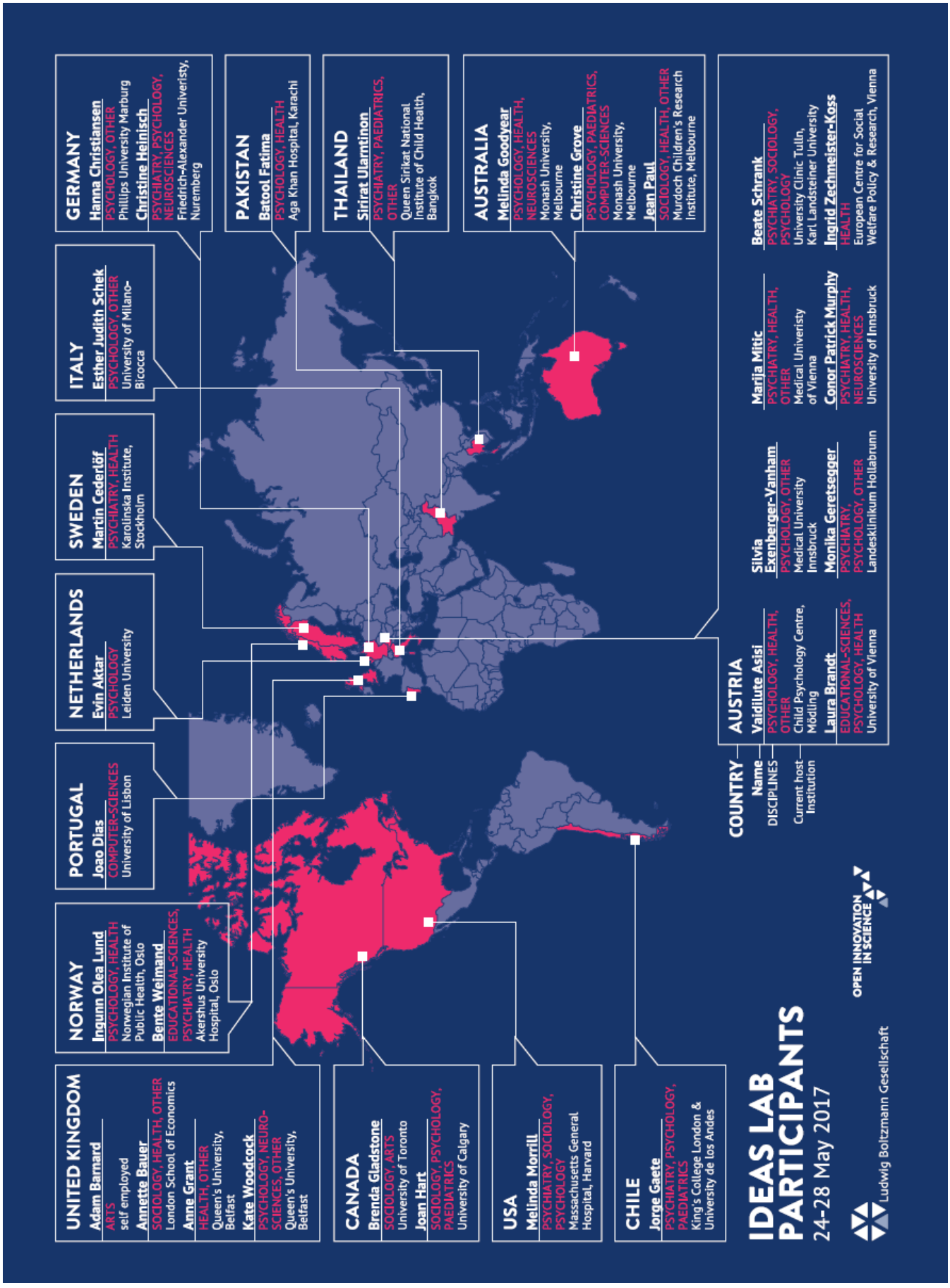

Figure 10. Geographical distribution of 29 participants in the Idea Lab.

IDEAS LAB EVENT

From ideas to Research Groups

The Ideas Lab served as a catalyst to help scientists from various disciplines to generate research proposals within the scope of one or more of the research challenges identified by the community. The Ideas Lab took place in Schlosspark Mauerbach near to Vienna, Austria, from 24-28 May 2017, inviting 29 researchers to participate in the workshop (one of thirty invited candidates rejected the invitation). The Ideas Lab was led by the Director, who was supported by a team of mentors and facilitators. During the event, the scientists were supported by mentors, international experts representing a variety of pediatric and adolescent health fields, providing ongoing feedback on the developed of project ideas in the Ideas Lab.

The organising team

The Ideas Lab was facilitated by *Knowinnovation*, an experienced company, running more than 50 Ideas Labs/sandpits a year. Together with an independent advisor to EPSRC, LBG organizers discussed the Ideas Lab's organisation and agenda starting in November 2016 until the event in weekly Skype meetings. The whole process was monitored by an external consultant for quality assurance of the novel research process during the preparation phase, and acting as a silent observer at the Ideas Lab.

The mentors were involved as evaluators for the selection process of applications, supporting participants to develop projects ideas during the Ideas Lab, and changed their role to live peer-reviewer for the final presentations and project proposals on the last day of the Ideas Lab giving funding recommendations to LBG.

Table 3. Roles and organisations at the Ideas Lab and mentors.

Name	Organisation
Isabella Deuerlein	Co-founder and Managing Director of IPOM and Psychoanalyst, Germany
Sophie Dix	Research Director, MQ: transforming mental health, UK
Michael Gregor Kölch	Head Physician Ruppiner Kliniken, Professor Medizinische Hochschule Brandenburg Theodor Fontane, Germany
Darryl Maybery	Director University Department of Rural Health, Professor Rural Mental Health, Monash University, Australia
Joanne Nicholson	Professor of Psychiatry, Geisel School of Medicine at Dartmouth-Hitchcock Medical Center, USA
Andrea Reupert	Assoc. Professor, Programs Director of Psychological Programs at the Krongold Centre, Monash University, Australia
Torleif Ruud	Emeritus Professor, Division of Health Services Research and Psychiatry, University of Oslo, Norway

Role	Organisation	Name
Facilitators	Knowinnovation	Tim Dunne, Tim Morely, Scott Middleton
Advisor	Independent consultancy/ EPSRC	Paula-Ann Bailey
Consultant	Technopolis	Katharina Warta
Organizers	LBG	Raphaela Kaisler Patrick Lehner
Guest speakers		
Psychiatrist	Kantonspital Winterthur	Kurt Albermann
Actress	Einmaliges Gastspiel	Eva Linder
Familiy member	HPE	Joy Ladurner
Photo exhibition	HPE	Lisa Kainzbauer

Figure 11. The organizing team. Mentor, facilitators and organizers at the Ideas Lab.

Ideas Lab' agenda

The Ideas Lab consisted of several phases and activities spanning over five days:

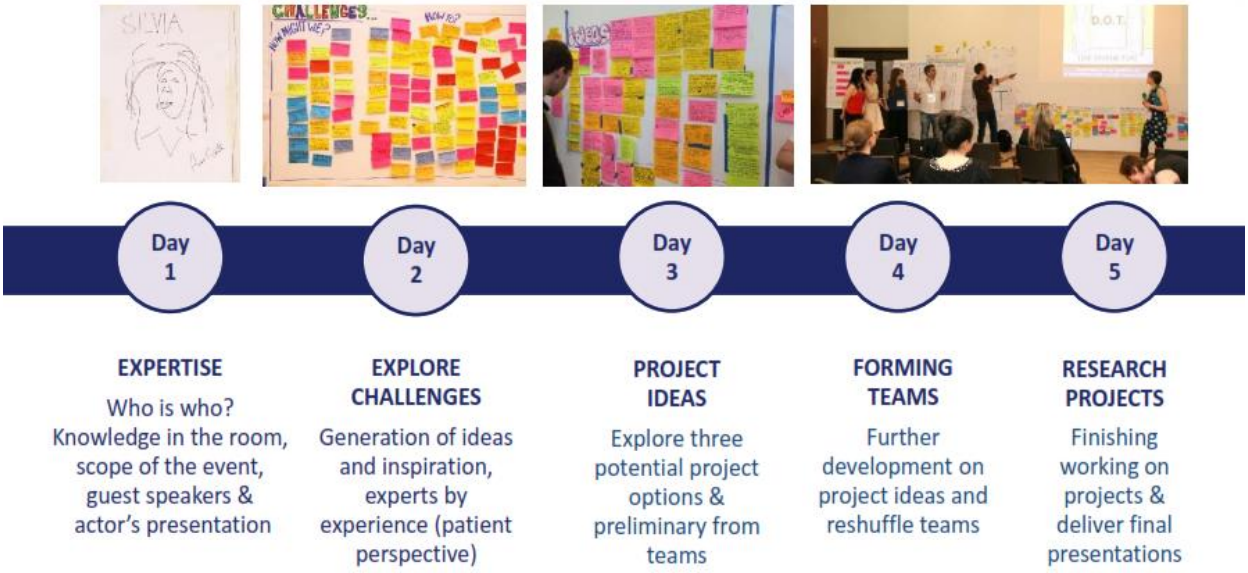

Figure 12. Overview of the Ideas Lab' agenda.

Day 1: People and knowledge in the room

The participants were introduced to each other by taking part in various ice-breaking activities to presented their expertise, background and interest in buddy pairs. Further, participants got input by the Ideas Lab's director's call-to-action emphasizing the challenges and aim of the Ideas Lab.

LBG invited guest speakers to the event that aimed to foster creative thinking and encouraging new ideas of participants by providing provocative information. Two family members Lisa and Joy (experts by experience) shared their experience and daily-life challenges as children of a parent with a mental illness. Furthermore, an actress performed as a patient seeking help from a voluntary participant acting as a psychotherapist/ psychiatrist. Eva Linder (actress) and her team developed this training method for medical students to relieve patients as training subjects. Kurt Albermann, a psychiatrist from the Hospital Winterthur, provided information about the German-speaking research area, its progress, and current projects.

Day2: Identifying opportunities

The participants explored opportunities and research challenges in the field of children of mentally ill parents by generating hundreds of post-its asking the question *"How to…?"* while talking to others for five minutes. The participants were reshuffled several times generating even more challenges and were instructed to think big, bold, be inspired by others ideas, and focus on question and not solutions.

Day 3: Stewarding candidate projects

The participants started to explore potential project ideas, finding solutions to the generated research challenges that have been clustered by mentors. The participants spent ten minutes to discuss potential ideas with an assigned person and swapped team several times. In the end of Day 3, the participants had to declare their personal interest and find

preliminary team members and topics to work on. The teams were asked to present their project idea in a five minutes presentation.

Day 4: Iterative project development

The preliminary teams changed several times as the project ideas developed. At noon the participants presented their project ideas the second time, and received feedback form all participants and mentors after the presentation. In the afternoon, the teams were supported with a 20 minutes individual feedback to the group by the mentors (mentor clinics). In the evening participants presented their project a third time, again receiving feedback. During Day 4 mentors switched their supportive role to live peer-review evaluators, supporting the teams with open questions.

Day 5: Final presentation

The participants were asked to submit a project proposal (max. five pages) prior to the final presentation in the morning and present their final project at noon.

Following projects evolved during the Ideas Lab and were presented on the last day:

- DOT-Die offene Tür: Promoting social experiences in children of parents with a mental illness
- Village-How to raise a village to raise a child: A collaborative village approach (CVA) plus increased sensitive screening for COPMI to better promote healthy child development and quality of life
- Cap/able Children: Creating Real Opportunities for Children of Parents with Mental Illness Capable children
- Ha(l)ppy: An online preventative intervention for children of parents with a mental illness
- Screen the genes: a multi-factorial approach integrating genetics, epigenetics, behavioral, and social economic data to predict and build resilience

Figure 13. Ideas Lab participants, mentors, facilitators and organizers.

Evaluation of teams and projects

After the final presentations, the mentors discussed the projects according to proposal assessment criteria provided by LBG. Once the mentors have reached a conclusion about the project and research teams, they **scored each assessment criterion** of the project proposal on a rating scale from 1-5. The total scores supported the discussion about each project, which they agreed concordantly for funding recommendation.

The assessment of the project proposals was based on the following five criteria:

- **Novelty:** revolutionary and high quality approach to complex challenges.
- **Highly interdisciplinary research:** clearly reflecting the distinctive opportunity for creating such projects that the Ideas Lab provides.
- **Engagement:** clear evidence of stakeholder/user engagement throughout the entire research process including dissemination activities and involvement of patients and family members in research activities.
- **Feasibility:** 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.
- **Impact:** Clear relevance to and the potential to make a distinctive and novel contribution towards addressing the research challenges in this area creating added value for society.

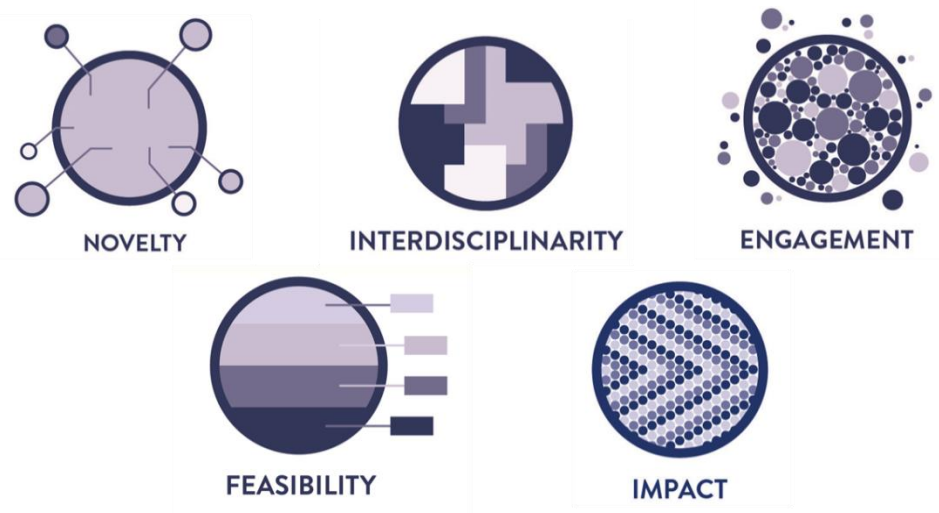

Figure 14. Evaluation criteria of project proposals and final presentation.

After discussion, the Director announced the final recommendation of the mentors to participants which projects should be funded by LBG.

Recommended Research Groups for funding

Two Research Groups were recommended for funding with a budget of 3 Mio.€ during four years (2018-2021). An essential part of the thrust for both research groups is to conduct from the children's point of view. The research conducts a survey of children and adolescents with mentally ill parents, and their everyday challenges and needs are addressed. Building upon this, child-appropriate interventions and measures are developed that favour improved collaboration in the network of caregivers and are designed to have a significant impact on

the current health system in Austria. To achieve this, the research groups will work closely with existing networks and patient organisations.

Research Group: Village – How to raise a village to raise a child: Is a community project designed to promote improvements in collaboration among helper systems and caregiver structures and is tailored to the needs of children of mentally ill parents. The aim is to promote the mental health and quality of life of children and adolescents through early recognition of problems by the community and the provision of child-appropriate forms of assistance.

Research Group: D.O.T – Die offene Tür [The Open Door]: Is an intervention project that uses digital technology to help children and adolescents (whose parents have a mental illness) stay in touch with their former classmates during the phase of transition from elementary school to the next-higher school level. Through online counselling and interventions, individual social skills are strengthened, and contact is permitted even outside the virtual world, in order to promote adolescent mental health and development.

Following the Ideas Lab, the selected research teams consisting of Principal Investigators and Co-Investigators were asked to elaborate on their research proposals covering their intended activities as identified at the Ideas Lab as part of the funding application. The deadline for submission of the elaborated research proposals was 31 July 2017.

Additionally, LBG invited the Research Group CAP-C to elaborate on their novel, innovative research approach with **50.000€ seed-funding** until the end of 2018. The Research Group is invited to explore the capability approach in the field of children of mentally ill parents, providing a detailed concept how to implement this approach in the field.

STRUCTURE OF THE RESEARCH GROUPS

Building a community

The Ludwig Boltzmann Research Groups on Mental Health for Children and Adolescents are intended to be an incubator of a new and enduring structure for research and innovation. They will enhance the existing portfolio of funded research in Austria with a model that is designed to inspire new approaches, in terms of research themes and structures.

It is expected that the interdisciplinary Research Groups will build **strong ties with the (national and international) scientific community** and will work closely together with key stakeholders such as patients' organisations, professional associations, user-crowds etc.

To build a strong tie with the community, LBG informed academic and non-academic key players in Austria, such as universities acting as potential host institutions, cooperation partners, and patient organisations acting as network partners, about the initiative and Mental Health research programme prior to the Ideas Lab. The potential partner network consisted of following organisations:

Figure 15. Potential partner network prior established to foster collaboration with the community prior to the ideas Lab.

Building a dynamic partner network to meet the challenge

The new Ludwig Boltzmann Research Groups on Mental Health for Children and Adolescents will be a discrete organisational unit of **Ludwig Boltzmann Gesellschaft GmbH** (LBG GmbH) embedded in a dynamic partner network.

The Ludwig Boltzmann Research Groups on Mental Health for Children and Adolescents are formed around the **Principal Investigators and Co-Investigators** that arose from the Ideas Lab. The **Principal Investigators** take the lead role within each Research Group and are expected to be strongly committed to their role; they will be offered **a full- or part-time employment contract by LBG**. They lead the research direction of the group and are responsible for the recruitment of further researchers as well as technical and administrative staff. The **Co-Investigators** are strongly committed to the Research group and can **receive funding from the Research Group** while remaining at their current institution. The Co-Investigators are not necessarily be employed by LBG and, although desirable, it is not essential that they are co-located with the Principal Investigators. Nonetheless, the Co-Investigators are expected to strongly engage with the Research Group by regular extended visits, online meetings, collaborations, etc.

The **Host Institutions (Austrian universities)** are the central partners of LBG in establishing the Ludwig Boltzmann Research Groups on Mental Health for Children and Adolescents. In a cooperative approach, LBG and selected Host Institution agree on the terms of reference.

The Research Groups on Mental Health for Children and Adolescents will be embedded in a dynamic partner network. **Cooperation partners** will participate in this new research programme as well as in the accompanying scientists in-residence programme and provide co-funding as well as access to resources and infrastructure such as data to further enhance the research programme. Partners will join the consortium from the beginning or may be added during the operation of the Research Groups. **Network partners** such as professional organisations and communities are involved in the research process as an integral part of the Research Groups, as well as in the dissemination and application of the research results.

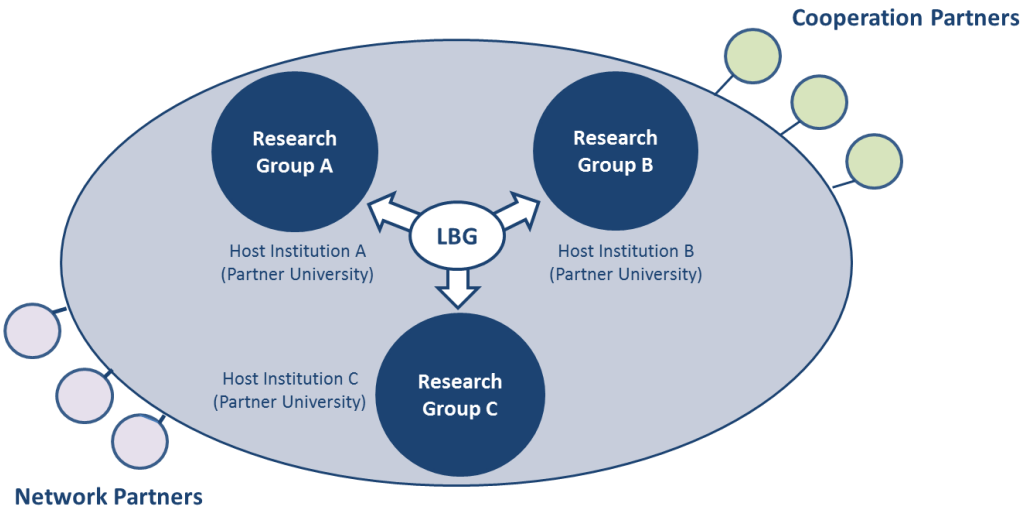

Figure 16. Structure of LBG Research Groups. A dynamic network consisting of Cooperation and Network partners will accomplish the Research Groups to build strong ties with the community involving patients, family members and end user-crowds.

Managing open Research Groups

Management of the research groups' staff, finances, financial control and administration will be conducted **jointly by LBG and the respective Research Group**, including management of matters relating to intellectual property rights. Besides the provision of general services to ensure the smooth operation of the Research Group, LBG offers special services such as the development of Open Innovation methods catered to the needs of the group or customized training programs.

LBG and the Host Institution are responsible for the **strategic decisions** in the **Partner Board** (decisions are taken with one consent) regarding the respective Research Group or the organisational structure that will facilitate the involvement of the partner organisations. However, to ensure the involvement of all partners authorised representatives of all partners as well as members of the Scientific Advisory Board will be invited to join the annual **Partner Assembly** meetings.

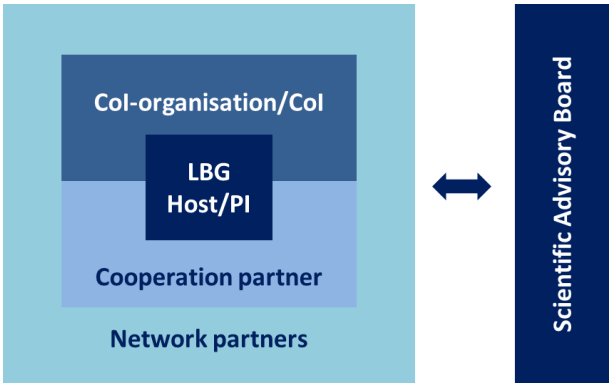

Figure 17. Management structure of the Research Groups.

Following the foundation of the Research Groups, a **Scientific Advisory Board (SAB)** comprising of three recognised experts will be established for the purposes of ongoing quality assurance.

A special feature of this research programme is the involvement of stakeholders, who, as experts by virtue their experience, provide an essential contribution to the research and application of results. The research programme does more than address the need for early support for children and adolescents who have parents with mental illness; through the multi-professional approach and sensitization of the community, it also helps destigmatise mental illness. Specifically, the research programme helps identify how an interdisciplinary approach can generate solutions to complex challenges in childhood and adolescent mental development. Therefore, the research programme is supported by professional

administration of LBG and a **Liaison Officer** connecting the Research Groups to engage with stakeholders building strong tie with the community.

Outlook

During summer 2017, the LBG and potential host institutions will agree on hosting the Research Groups according to their need (infrastructure and network) for the next four years. Additionally, cooperation and network partners interested in working with the Research Groups will cooperate with the dynamic partner network to implement a long-term sustainable impact for children of mentally ill parents and the Austrian health care system. The Research Group will start working from the beginning of 2018 until 2021.

An **interim evaluation** will take place in the **fourth year**. The interim evaluation is key to assure the quality and relevance of the research groups' work. This evaluation will include an assessment of the work carried out so far, but is also intended to provide input for the transition phase, i.e. to ensure that a plan containing measures and milestones for transition (with respect to the incubator function) is put in place.

LINKS

Open Innovation in Science Center: www.ois.lbg.ac.at

'Tell Us' project: www.redensiemit.org

Ideas Lab: www.ideaslab.lbg.ac.at

Impressions Ideas Lab: https://youtu.be/hYfBC75_p5c

Knowinnovation: www.knowinnovation.com

winnovation: www.winnovation.at

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