Philosophy in Science

1. Brief project summary
As science gets more complex, interdisciplinary, and socially potent, it increasingly bears on areas traditionally occupied by the humanities; but it also increasingly needs the reflective understanding that philosophy can provide. This project facilitates this two-way flow of ideas. It creates an interdisciplinary hub that helps the humanities to integrate natural science perspectives into research and teaching, and helps the natural sciences to integrate humanities perspectives. With projects dealing with linguistic communication and formal logic, we bring experimental and mathematical methods into the humanities; with other projects, we integrate the humanities into the life sciences at UiO:Life Science.

2. Project participants and their affiliations
Nicholas Elwyn Allott (Senior Lecturer, ILOS), Ingrid Lossius Falkum (Researcher, IFIKK, project leader RCN), Peter Fritz (Assoc. Professor, IFIKK), Carsten Hansen (Professor, IFIKK, core group member CSMN), Dag Haug (Professor, IFIKK/ILN), Janne Bondi Johannessen (Professor, ILN, core group member MultiLing, head of The Text Laboratory), Øystein Linnebo (Professor, IFIKK, Co-Director of ConceptLab, Project Contact), Gry Ofstedal (Researcher, IFIKK, project leader RCN), Rachel Sterken (Assoc. Professor, IFIKK), Anna Smajdor (Assoc. Professor, IFIKK), Sebastian Watzl (Assoc. Professor, IFIKK, project leader RCN, core group member CSMN, Project Contact)

HF-based collaborators
Halvor Eifring (China Korea Studies, IKOS), Alexander Jensenius (musicology, IMV), Franziska Köder (experimental pragmatics, IFIKK), Elizabeth Lanza (linguistics, MultiLing), Alejandra Mancilla (philosophy, IFIKK), Sam Roberts (logic, IFIKK), Paula Rubio-Fernandez (experimental pragmatics, IFIKK), Unn Røyneland (Socio-Cognitive Lab, MultiLing), Kjell Johan Sæbø (linguistics, ILOS)

Collaborators outside HF
Jan Bill (archeology, KHM), Svend Davanger (neuroscience), Eivind Engebretsen (interdisciplinary health science), Cathrine Holst (sociology), Erika Hagelberg (molecular genetics), Bård Lahn (TIK – Centre for Technology, Innovation and Culture, CICERO), Jon Kyllingstad (history, KHM), Ole Jacob Madsen (psychology), Julien Mayor (developmental psychology), Deborah Oughton (chemistry, ethics and philosophy of science), Anders Strand (philosophy), Anders Malthe Sørensen (physics)

International collaborators
Richard Ashcroft (Centre for the Study of Incentives in Health, London), Robyn Carston (UCL), Eve V. Clark (Stanford), Daniela Cutas (Umeå), Salvatore Florio (Birmingham), Sara Green (Copenhagen), Agustin Rayo (MIT/Prof II, UiO), Georges Rey (Maryland), Jennifer Saul (Sheffield), Elena Hoicka (Sheffield), Stewart Shapiro (Ohio State University/Prof II, UiO), Susanna Schellenberg (Rutgers Center for Cognitive Science), Susanna Siegel (Harvard), David Sloan Wilson (Binghamton, The Evolution Institute), Deirdre Wilson (UCL/Prof II, CSMN).

Institutional collaborators
UiO:Life Science, Centre for Computing in Science Education (UiO), The Seminar in Science Studies (UiO), MCMP – Munich Center for Mathematical Philosophy (LMU Munich), EGENIS – the Centre for the Study of Life Sciences (Exeter).

3. The research component
Research theme 1: Between linguistics, psychology and philosophy
At the interface between linguistics, psychology, and philosophy, different perspectives on human linguistic and communicative abilities join efforts. In this research theme, we will focus on the following three areas emerging from this interdisciplinary context.
Area 1: Issues in theoretical, experimental and developmental pragmatics. Pragmatics is the study of how we communicate, focusing on how we can convey more than the linguistic meanings of the words and phrases we use, and how hearers can infer this intended content in context. Experimental pragmatics uses methods from psychology to test theories in this area. The CSMN, through its subproject on Linguistic Agency, has been a world-leading centre for theoretical and experimental pragmatics. One important goal is to continue and secure this strong interdisciplinary research environment, already established at HF. Further, as pragmatics is increasingly seen as playing a foundational role for language acquisition more generally, we will focus on the acquisition of word meaning and non-literal uses of language. Using experimental methods such as eye-tracking, we will investigate the role of extra-linguistic cues in the acquisition of word meaning, and the development of children’s processing and comprehension of a range of non-literal language phenomena (e.g., indirect requests, hyperbole, metonymy, irony and implicature). The goal is to gain a deeper understanding of the developmental trajectory of semantic and pragmatic processing.

Area 2: The experimental investigation of our tendency to generalize and essentialize. Those tendencies, under the name of ‘psychological essentialism’ have received much focus in philosophy of mind and language. We will, on the one hand, investigate what underlies individual differences in essentializing tendencies. In order to accomplish this, we will link the level of generalizing and essentializing to individual performance on the IAT (implicit association test) and other standard tests for personality, executive function and cognitive/social traits. On the other hand, we will investigate what sorts of contexts cause people to generalize and essentialize less: which linguistic expressions protect against essentializing tendencies? One goal is to connect these results to the prominent literature about how to praise, reprimand and talk more generally to adults and children.

Area 3: The nature of the mental representations that underlie linguistic processing. The notion of a “computational/representational” account of the mind is fundamental to work in cognitive science and linguistics, and this work has fuelled an ongoing revolution in our view of human nature, with profound implications for philosophy of mind, philosophy of language, and philosophy of science. In particular, it has become clear that our genetic endowment plays a very considerable role in enabling and constraining our abilities, and much has been discovered about the details. Another key message is that the success of research into mental competences depends on abstracting away from much of the (real) complexity of human performance. Many difficult problems remain, and philosophers play a key role, engaging with such fundamental questions as whether computation involves a commitment to actual processes in the brain and to symbols actually representing things; and if so, what “things”; and how the processes, representations and represented things are “psychologically real”.

The researchers involved in research theme 1 are Allott, Falkum, Hansen, Johannessen, Köder, Mayor, Rubio-Fernandez, Sterken and D. Wilson. They will collaborate closely with Jensenius, Lanza and Røyneland. International collaborators are Clark, Carston, Hoicka, Saul and Rey.

Research Theme 2: Between biology, medicine, psychology and philosophy
Within this theme, we will address questions regarding fact and value, knowledge and expertise, and individual and society as they arise at the intersection of the humanities and the life sciences. We will work in three interconnected areas.

Area 1: Plasticity of mind and brain in response to self-improvement and cultural change. Our research concerns how mental capacities like attention are shaped by traditions for self-improvement, linguistic communities, and social structures. Our research integrates the historical cross-cultural investigation of mind-wandering and meditation (Eifring), the psychology of self-help practices and mental
improvement (Madsen), the neuroscientific investigation of stress and meditation (Davanger) and philosophical investigation of the role and normative structure of attention and perception, as well as cultural influences on them (Watzl, and collaborators Schellenberg and Siegel). Together this team will extend existing collaborations, and ask novel research questions that need an interdisciplinary setting.

Area 2: Gene-culture interaction. We investigate the feedback between cultural structures and the human body and its genetics. We bring together the history of ethnic and racial classification (Kyllingstad), DNA typing, human molecular genetics and molecular evolution (Hagelberg), case studies in archaeology (Bill), the evolutionary biology of cooperation and its contemporary significance (D. S. Wilson), and philosophical reflections on genetics, causation (including mathematical frameworks for causal inference), the biology/culture distinction and the political and scientific role of generalization (Watzl, Strand, Oftedal, and Sterken). Through this combination of expertise, we will make progress on these topics of high societal relevance.

Area 3: Responsible research and innovation (RRI). RRI opens for fully integrating humanistic viewpoints directly in life science research. It fosters “inclusive and sustainable research and innovation” and aims at a “science for society, with society” (EU Horizon 2020 framework). This requires the understanding of key scientific representations, explanations, models, and analyses, as well as perspectives on the risks and consequences for environment, public health, and the general development of society. Central RRI perspectives are ethics, public engagement, open access, gender perspectives, and science education. In this area, appropriately situated humanities researchers can substantially shape the scientific and policy landscape. Our team (Smajdor, Oftedal, Strand, with Engebretsen, Holst, Mancilla, and Ashcroft, Cutas, Green) is uniquely positioned to address the large questions that arise in this arena.

Research areas 1-3 are integrated by the driving concern regarding the integration of the humanities and the life sciences when it comes to normative, historical, biological and policy questions regarding self and society. This connection is reflected in overlaps in the respective teams.

Research theme 3: Between mathematics, computer science, and philosophy
In the philosophy of mathematics, we focus on both foundational issues and the application of mathematical tools in other disciplines. Foundational issues include

- core mathematical concepts and representations (e.g. “collection”, “infinity”, and “generality”), their development and possible shortcomings and improvements
- objectivity in mathematics, especially in higher set theory
- the nature of mathematical structures
- the notions of proposition, property, and higher-order logic

Mathematical representations and reasoning are widely applied in contemporary science. The trend is that their importance increases, also in the humanities. Logical and mathematical representations are extensively used in linguistics, where they form the backbone of many semantic theories. In psychology and neuroscience, they are used at all levels of description, from neuronal membrane channel dynamics to neuronal networks and models of human reasoning. Examples are Bayesian models of perception, cognition, and brain functioning. Sophisticated knowledge exists in mathematics, neuroscience, and philosophy about how to integrate mathematical models. We aim to provide a synergy by creating an interdisciplinary platform for such integration at different levels of description. Furthermore, the centrality of mathematical modelling and computational methods in contemporary science provides new challenges and possibilities for communicating knowledge, estimating risks, dealing with scientific uncertainty, and judging the relevance of evidence. All these questions need to be addressed in an interdisciplinary manner.

Researchers include Fritz, Linnebo, Roberts, Haug and Sæbø, with Florio, Rayo, and Shapiro.
4. The educational component

We strongly believe in the benefits of strengthening collaborative and interdisciplinary research-based teaching at bachelor, master and PhD levels. The key is to do so in a systematic way, and with innovative problem-based methods that engage and activate students. Our teaching plan aims to integrate humanities perspectives in science so that the “potential of the humanities may be unleashed in order to meet the major challenges of our time” (Stortingsmelding St. 25 2016–2017), such as the emerging life and bio-nano science technologies, climate change, and the role of linguistic generalization in the social and political arena. Our initiative will enable courses with great potential for attracting, motivating and retaining students, in part by making the study of philosophy more relevant within a broader scientific context. The positions applied for will facilitate, organize and teach parts of these offerings.

We will develop a course portfolio that integrates philosophical, mathematical, linguistic, ethical, and scientific perspectives. Instead of only teaching students abstractly about general philosophical problems, we will develop courses that are centered on problems as they arise in the students’ field of interest. These include problems in research ethics, responsible research and innovation, the scientific, ethical and institutional aspects of climate change, mathematical modelling and statistics, linguistic communication and development, knowledge communication and translation, and the interaction between science and society. Our portfolio covers the BA, MA and PhD level. More specifically, we will:

(1) Revise and reinvigorate the BA 40-group “Philosophy of Science” (40VITFIL) to make it attractive and relevant for students from a broad range of disciplines, both in the humanities, the social and the natural sciences. This course-group will include existing courses and newly developed courses (many of which are taught in Norwegian), and have the following structure:

Obligatory Course:
- FIL1002 Epistemology and philosophy of science

In addition, it is obligatory to take one of the following courses:
- FIL1006 Introduction to logic
- FIL2208 Epistemology and philosophy of science. This course alternates between Philosophy of Biology, Philosophy of Medicine, and a new course on Philosophy of the New Life Sciences that we will add once the joint position with UiO:Life Science is in place.
- FIL1001 Metaphysics and philosophy of mind

The obligatory courses are supplemented with two additional courses, which can be selected from courses that are new with this initiative:
- Science, society, and philosophy. This course alternates between:
  - Scientific, normative and institutional aspects of climate change (Mancilla, Lahn) covers (1) a climate science part giving an overview of the science and related discussions of scientific uncertainty, (2) a normative philosophical part discussing what should be done, including rights of and duties towards future generations, and (3) a part focused on institutional aspects, including limitations and possibilities due to decision structures and institutional design.
  - The political and scientific importance of generalizations (Sterken) investigates philosophical questions related to the role of generalisation in social, political and scientific contexts, including stereotyping and social ontology.
• Challenges in medicine and health research (Smajdor) will introduce participants to recent controversies in clinical practice and biomedical research. It will explore problems inherent in moral theorizing and also critically examine dichotomies such as health/disease, desire/need and biological/social.

• Pragmatics and philosophy of language (IFIKK/ILN). This course alternates between:
  ○ Pragmatic theory introduces students to key debates within contemporary pragmatic theory and situates them within an interdisciplinary context of linguistic, philosophy of language and cognitive psychology perspectives.
  ○ Linguistic and pragmatic development introduces students to the fundamentals of first language acquisition, which it places within the broader context of communicative development.

• New methods in the humanities:
  ○ Algorithmic thinking and quantitative methods introduces topics such as algorithmic thinking, basic programming, and basic quantitative tools like regression analysis. It is especially adapted to students in the humanities. The course will be developed in collaboration with Malthe-Sørensen and the Centre for Computing in Science Education, with UiO’s strongest expertise in such teaching.

Or existing courses:
• ENG2157 Semantics and pragmatics
• FIL2403 Philosophy of language
• LING1100 Semantics and pragmatics 1
• LING2100 Semantics and pragmatics 2 (requires LING1100)
• FIL2105 Metaphysics and philosophy of mind
• FIL2000 Philosophical methods
• FIL2405 Philosophical logic and the philosophy of mathematics (requires FIL1006)
• FIL2202 Gender and philosophy

Building on this course portfolio, which will be in place by spring 2019, we use our collaborations, which will include UiO:Life Science, and the new hires we are proposing to develop new courses that will help the life sciences to integrate humanities perspectives into their teaching.

(2) We will continue existing and develop new MA and PhD courses (jointly taught by several disciplines) focused on theoretical, normative and societal aspects of science, and on philosophical approaches involving empirical and computational methods. Both the development of new courses and the reorganization of existing courses will follow our general strategy to increase problem based teaching, and the integration of philosophical, mathematical, linguistic, ethical, and scientific perspectives. These courses fall into the following categories:

• Experimental, mathematical and computational methods
  ○ FIL4400 Logic and philosophy of language (regular MA course)
  ○ Formal methods in philosophy (based on an existing PhD course)
  ○ Experimental methods and statistical analysis in humanities research (new MA course developed with MultiLing/ILN and RITMO/IMV). This course gives students hands-on experience with experimental methods used in humanities research, including behavioural tasks, EEG/ERP and eye-tracking, as well as basic statistical knowledge.

• Ethical and societal challenges in life science and medicine
  ○ Bioethics and medical ethics (to be developed by Smajdor)
- **Science and society** (MA/PhD course on social epistemology, science-society interaction, science policy and funding schemes, to be developed)
- **Culture and biology** (based on a PhD course taught by Watzl)
- **Responsible research and research ethics** (MA/PhD course, to be developed)
- **MNSES9100 - Science, ethics and society** (oblig. PhD course at MN, currently taught by Oughton)

**Conceptual foundations within scientific progress**
- **Development of representational devices in science** (based on PhD course organized by Linnebo, Strand, Oftedal in collaboration with ConceptLab in 2016)
- **The philosophy of bio-nanoscience, synthetic biology, soft materials, and other innovations** (to be developed by Oftedal)

**Language and communication**
- **ENG4118 Relevance theory: language, communication and cognition** (Allott)
- **Communication and inference** (PhD course organized by Allott)
- **CSMN4021 Pragmatics and Relevance theory** (MA course previously organized by Allott)
- **Conceptual development** (PhD course to be organized by Falkum and Köder)
- **PSY4206 Communication and language** (Mayor)

In developing new courses at BA, MA, and PhD level, we can draw on the expertise of our core group members, our experience at working in interdisciplinary environments (see Sec. 6), and our expert collaborators (Engebretsen, for example, is heading a project on how a better understanding of the forms and functions of knowledge can help facilitate medical and health care practice, Holst is an expert on the role of knowledge and expertise in democratic societies, and the Centre for Computing in Science Education has been ground-breaking in developing teaching tools for activating students in an interdisciplinary context). Aside from specific courses, we aim to create an arena where various programmes can interact and exchange competence and experiences. In this respect, we will collaborate with the organizers of the obligatory PhD training at the faculty of mathematic and natural sciences (Oughton), and aim to extend this collaboration to other faculties.

5. **Project objectives**

Our overarching aim is to use philosophy to facilitate a two-way flow of ideas and methods between the humanities and the other sciences. To achieve this, we have a number of more specific project objectives.

1. To serve as a link between HF and UiO:Life Science. We will work to ensure that humanities perspectives and skills are integrated in teaching and research at UiO:Life Science and that the knowledge and methods from the life sciences are made available to teachers and researchers at HF.

2. To ensure a systematic understanding of scientific representations and their role in investigation, explanation and communication of science. This is increasingly important for scientific innovation and inter-scientific communication, and to ensure the societal impact of scientific results.

3. To study linguistic and pragmatic abilities, making extensive and novel use of experimental methods

4. To use mathematics and computational methods in philosophy and to use philosophy to analyze and critique the use of such methods in science more generally.

The recent white paper on the Humanities in Norway (St. 25 2016-2017) recommends that humanities research aim for greater societal impact and contribute more to solve societal challenges. Our objective aims to do just that. Moreover, the strategy plans of HF and IFIKK – as well as EU strategies – consider interdisciplinary research to be the most promising path towards the realization of these aims. An increase in the amount of interdisciplinary work is taken to be an important goal for other reasons as well.
Philosophy in Science aims to strengthen and develop existing research at HF and IFIKK that is particularly strong in these respects, integrate them with core philosophical approaches, and reflect their importance in teaching.

6. Cooperation and interdisciplinary aspects of the project

We intend to serve as a hub for individual research projects in all areas that fall under our remit. In this way, we will ensure a robust and vibrant research community.

Our interdisciplinary work will be systematically integrated with our teaching initiatives, where we will promote a greater exchange of skills and methods between the humanities and the natural sciences, as detailed in 4. Concerning research, our project involves interdisciplinary collaboration of many forms:

(5) Philosophy, linguistics and psychology. Allott, Falkum, Hansen, Köder, Mayor, Rubio-Fernandez, Sterken and D. Wilson collaborate on issues in theoretical, experimental and developmental pragmatics, and on linguistic generalization and representation. With this initiative, we will expand the scope of this interdisciplinary approach, inter alia, by using novel experimental methods.

(6) Philosophy, history, neuroscience, and psychology. Eifring, Davanger, and Watzl are collaborating in investigating historical, philosophical, and neuroscientific approaches to meditation and mind-wandering. We will add Madsen from psychology and expand the scope of this research.

(7) Philosophy and UiO:Life Science. Oftedal and Smajdor are currently the only HF collaborators in interdisciplinary convergence environments with UiO:Life Science (Oftedal: programmable cell-like compartments with molecular biology and mathematics; Smajdor: epigenetics and bioethics of human embryonic development with epigenetics and medicine). We will build on these collaborations, and our involvement in The Seminar in Science Studies (Strand, Holst) and extend them.

(8) Philosophy, archaeology, genetics, and history. Several collaborators in this initiative (Bill, Hagelberg, Kyllingstad) are in interdisciplinary projects at the intersection of cultural history, archaeology, and genetics. We will introduce new philosophical perspectives (Oftedal, Strand, Watzl) and international collaborators from evolutionary biology (D. S. Wilson). We will make use of Watzl’s training in philosophy and biology (and work experience at Harvard’s Mind-Brain-Behavior Interfaculty Initiative).

(9) Philosophy and mathematics. Fritz, Linnebo, and Roberts collaborate extensively with mathematics in their work on the foundations of set theory, foundations of semantics, and higher-order logic. The team draws on the members’ extensive training in both philosophy and mathematics and mathematical logic.

(10) Philosophy and semantics. Haug, Fritz, Linnebo, and Sæbø already cooperate at the intersection of the two fields, examining how methods from each field can illuminate questions in the other.

(11) Experimental methods in the humanities. With this initiative, Falkum (IFIKK), Jensenius (RITMO/IMV), Johannessen (TextLab/ILN), Lanza (MultiLing/ILN) and Røyneland (The Socio-Cognitive Lab/ILN) will establish a Methodology Forum at HF, with a particular focus on experimental methods used in humanities research. In connection with this, we will establish an MA course in experimental methods and statistical analysis for HF students (see above). This will fill a gap in the course portfolio at HF, contribute to better and more extensive use of existing, high-cost equipment (e.g., eye-trackers), and to further strengthen this interdisciplinary approach by making it available to a larger group of students and researchers.

7. Our innovative potential

Our research and educational components described in 3. and 4. are highly innovative. While we build on our accomplishments to date (reflected in our strong records of publications and acquisition of external
grants), this project aims to go far beyond what could be done within our ordinary departmental confines. New interdisciplinary collaborations will be set up, and existing ones will be deepened.

There is currently a unique potential at HF for our initiative and the collaborations it will forge.

(1) CSMN, which is now closing down as a Centre of Excellence, has had a strong focus on naturalistic accounts of normativity, language, and the mind.

(2) UiO:Life Science, the largest priority area at the University of Oslo, is in the process of being set up, has expressed an interest in collaboration with the humanities, and has committed to close collaboration with this initiative (see attachment).

(3) IFIKK hosts the Toppforsk project ConceptLab, which examines and improves concepts in the formal sciences, social sciences, and linguistics. Our initiative complements ConceptLab as we focus on how philosophy can contribute to and learn from scientific understanding and development, thereby facilitating research, communication, and science-society interaction.

(4) There are many ongoing externally funded research projects led by younger researchers in our group (Falkum’s project on pragmatic development and children’s understanding of figurative meaning; Watzl’s projects on attention and the perception/cognition distinction; Oftedal and Strand’s project on causal representation and explanation in the study of biological complexity).

In the spring of 2017, we initiated the “Philosophy and Life Science Research Group” at IFIKK, focusing on the interface between philosophy and the life sciences broadly construed. We have a research group working at the interface between philosophy and mathematics that includes Linnebo, Fritz and Roberts.

To secure a robust community for systematic interdisciplinary research and teaching of this kind, we apply for funding to advance and prioritize positions within the core areas of the initiative.

8. Potential for attracting external funding

Within the lifetime of our project, a minimum of five of our team members will apply for funding from the ERC (Falkum, Fritz, Linnebo, Sterken, Watzl). In light of their research achievements and previous success in securing external funding, these applicants will all be very strong contenders. (Linnebo is so far the only HF researcher to have obtained an ERC grant.)

Our interdisciplinary approach will extend the pool of funding opportunities beyond the usual sources for the humanities. RCN has several programmes that will become relevant as funding sources. In addition to FRIHUMSAM there are technology and life science oriented calls from NANO2021 and BIOTEK 2021. SAMANSVAR and ELSA are focused on responsible research and innovation as well as ethical, legal and social aspects of research and technology. IKTPLUSS concerns research related to the “information society” and “big data”. The next three calls from SAMKUL, which are particularly tailored to the humanities, will focus on “Man and Nature”, “Technology and Material Environments”, and “Knowledge, Welfare and Diversity”.

The three associate professorships for which we seek funding will include a responsibility to develop projects and apply for external funding. Due to the track record of the group and the range of potential sources of funding, we see huge potential for significantly expanding the initiative.

The track record of the group when it comes to attracting HF external funding is:

- **Falkum**: Acquiring Figurative Meanings Young research talent project (FRIHUMSAM, 2015-20), Metonymy in Context and Communication (FRIHUM, 2011-15), Contrastive Lexical Pragmatics (FRIHUM 2006-09)
- **Hansen**: Co-applicant for Centre for the Study of Mind in Nature (SFF, 2007-17).
Philosophy in Science

- Linnebo: ConceptLab Toppforsk project (FRIHUMSAM 2016-21), Plurals, Predicates and Paradox (ERC Starting Grant, 2010-14).
- Smajdor: Epigenetics and bioethics of human embryonic development Convergence environment project UiO: Life Science; In Vitro. Wellcome Trust, UK, Vaccination and nationhood Wellcome Trust, UK, Reports on (1) Artificial gametes and (2) The ethics of naturalness Nuffield Council on Bioethics, UK
- Watzl: Thought and Sense Young research talent project (FRIHUMSAM, 2015-18)

Several of the research themes described above are relevant to RRI (Responsible Research and Innovation), which opens the range of relevant funding sources to most life science and technology programs. Core group members Smajdor and Oftedal already collaborate in environments with vast RRI opportunities.

9. Potential for societal impact
It is a clear message in the report to the Norwegian parliament on the humanities in Norway (Meld. St. 25, 2016-2017) that the potential for societal impact of humanities research needs to be realized to a much larger extent. This initiative will contribute directly to fulfilling this goal through actively seeking to influence how science shapes society via research and teaching at the interface of science and the humanities. We see the following potential outcomes:

1. to help humanities students and researchers to be better equipped to set the societal agenda by integrating them into interdisciplinary settings with social and natural sciences;
2. to help produce better science, which has a stronger conceptual and methodological foundation, through the integration of humanities perspectives;
3. to help produce more reflective science, which has a stronger ethical and societal foundation and thus can become “science for society” (Meld. St. 25, 2016-2017);
4. to train students to combine their scientific work with broader perspectives, conceptual discussions, ethical dimensions, and a societal outlook (e.g. enabling students to work in RRI positions that are increasingly in demand in biotechnology, digital technology, and beyond).

10. Potential for lasting cooperation and value-added
While the project builds on existing areas of strengths and collaboration, the extensive collaboration within HF and beyond that is envisaged in connection with the project would never be possible without it. The permanent positions that are part of our project are crucial in this respect. We expect the cooperation between UiO:Life Science and relevant communities within HF to be of a lasting nature, facilitated in part by the shared position. The shared position between IFIKK and ILN would contribute to strengthen the collaboration between strong research environments at both departments with overlapping or intersecting interests, but where the full collaborative potential has until now not been borne out.

11. How the project will be integrated into IFIKK and HF after the end of the FPIII-funding
The project is a central component of, and fully integrated with, IFIKK’s strategy. This is manifested in part by the commitment of IFIKK and the other departments involved to continue funding of the permanent positions that are associated with the project. Furthermore, IFIKK’s strategy calls for even more
collaborative and interdisciplinary research and teaching of the sort proposed by our project, in part to position ourselves better to apply for external funding.

12. Benchmarking

(1) We intend to have the new 40-group (40VITFIL) up and running by spring 2019, and to secure its integration into BA-programmes covering disciplines within UiO:Life Science by autumn 2019.

(2) Within the lifetime of the project we aim to submit a minimum of five ERC-applications. In addition, we aim to secure funding for at least five projects through applications to the Research Council of Norway (see programs listed above).

(3) Philosophy in Science will serve as an "interdisciplinary hub" facilitating connections between HF researchers and HF external research areas, including life science and RRI, and between HF-researchers interested in such interaction. Through research conducted at the intersection of the humanities and science, we will be able to address important questions not previously attended to, and contribute novel and societally important perspectives.

(4) We intend to build an interdisciplinary community of researchers in our areas in the same league as leading international centers such as the Munich Center for Mathematical Philosophy, The Minnesota Center for Philosophy of Science, EGENIS – the Centre for the Study of Life Sciences at Exeter, and Center for Cognitive Science at Rutgers University.

13. Positions and expenses applied for

- One 100% position as associate professor in philosophy of the natural sciences, starting 2019, with responsibility for coordinating teaching and research, and seeking external funding.
- One 50/50 shared position as associate professor, IFIKK and ILN, focusing on the interface between philosophy, linguistics and psychology, starting 2019, with responsibility for seeking external funding and coordinating the HF Methodology Forum.
- 15% of a visiting professorial position in logic, shared with ILN, Computer Science, and probably Mathematics, from 2020, for the period of this initiative. Responsible for seeking external funding and strengthening Research Theme 3.
- One 4-year post-doctoral fellowship with 25% teaching focusing on computational and mathematical methods in natural science and/or humanities, starting 2019.
- One PhD fellowship with focus on Life sciences and/or empirical methods in philosophy, starting 2020, covered by UiO:Life Science.
- Two 3-year 20% professor II positions, one to further strengthen the interface between philosophy and mathematics, and the other to strengthen the interface between philosophy of science and policy making, preferably from social or political science.
- Four 2-year 20% positions as research assistant, associated with the HF Methodology Forum.
- A part time administrative position, 20% over the first two years.
- Other expenses, including funding for workshops, research stays, additional teaching expenses and parts of the financing for the Norwegian Summer Institute on Language and Mind. Estimated NOK 425,000 per year.
- With regard to positions and expenses applied for we will, of course, be responsive to a holistic assessment of our departments' financial situation.
### Budsjett faglige prioriteringer 2019-2023

Legg inn tekst, årsverk og beløp i de gule inputfeltene. Beløp blir automatisk beregnet på bakgrunn av gjennomsnittlige lønnstrinn. Lønnsøkning er inkludert.

For rekrutteringsstillinger blir det brukt rundsum.

#### Institutt:
- IFIKK

#### Fagområde:
- Filosofi

#### Prioritert område:

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#### Egenandel

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