

Strategy plan 2010–2013

From gene to behaviour – basic research for better health

**Strategy plan for the Institute of Basic Medical Sciences,
University of Oslo**

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From gene to behaviour - basic research for better health

We are in the midst of a development that can be termed a medical revolution. New knowledge is being acquired more rapidly than ever before. Within a few years new realizations in the field of basic research will be made available to patients in the form of new diagnostic and therapeutic possibilities. Some of the areas expected to become important in future basic research, diagnostics and therapy include stem cell research, genome research, immunology, nutrition science, neuroscience, and modelling of biological systems.

In order to ensure that Norway is part of this development and is able to offer its citizens the diagnostic and therapeutic possibilities that will come in the future, basic research, clinical research and health-related education must be of high quality. In this context, the Institute of Basic Medical Sciences (Institutt for medisinske basalfag, IMB) should play an important role nationally in basic research and biomedical education.

Overall objective

The institute's overall objective is to promote basic medical knowledge in order to understand normal processes, provide insight into mechanisms that cause illness, and promote good health.

IMB's visions

- IMB aims to be a leading national centre for basic medical research of high international calibre.
- IMB aims to be an important actor in the field of translational research as a provider of essential competence to clinical and preventive medicine.
- IMB aims to be a leading institution in research-based education in the basic medical disciplines.
- IMB aims to have a central role as a provider of biomedical knowledge for the benefit of society.

IMB's values

- **Academic freedom:** IMB will promote and protect academic freedom and work to strengthen basic medical research.
- **Cooperation:** IMB shall work to expand cooperation with competent national and international institutions in the fields of research and education. IMB will maintain openness towards other research institutions both domestic and foreign.
- **Working and learning environment:** IMB will strive for a positive and inclusive environment with focus on providing employees and students the opportunity to realize their full potential.
- **Competence development:** IMB will make optimal provisions for developing the employees' competence.
- **Visibility:** IMB will be publicly visible through the provision of research-based information on health-related topics.
- **Protection of the environment:** IMB will conduct its activities with the greatest possible consideration for the internal and external environment.
- **Ethics:** IMB will work in compliance with high ethical standards.

Central fields of study

Areas of priority for the institute's research shall reflect the international advances in biomedical research and shall be in accordance with the academic priorities adopted by the university and the faculty. The institute's research activity is a necessary requisite for the research-based education offered by the institute's scientific staff. IMB is central in the faculty's teaching within the professional study programmes in medicine and in the Bachelor's and Master's studies in nutrition.

The institute's research groups shall preferably work within the following areas of priority:

- Cell and molecular biology
- Organ physiology
- Immunobiology
- Neuroscience
- Behavioural research
- Nutrition science
- Biostatistics, epidemiology and modelling of biological systems

Research activities within these areas of priority currently encompass the following:

- Cell and molecular biology includes processes such as regulation of cell proliferation, cell death, gene expression, intracellular membrane and protein transport, as well as metabolic biochemistry, stem cell biology, developmental biology and molecular endocrinology.
- Organ physiology includes studies of the heart and circulatory system, where the whole-organ function is studied in interaction with cell and molecular biological alterations. Focus is on the regulation of normal, intact organs as well as pathophysiological processes, for example in conjunction with cardiac and cerebral ischemia.
- Immunobiology encompasses defence against infections and cancer, but also the regulation of inflammation and autoimmunity. Main current topics include molecular mechanisms for target recognition, signal transduction, and interaction between the various branches of the immune system.
- Neuroscience includes studies of the nervous system from synapse to system and comprises molecular and cell functions, neurophysiology, neuroanatomy and image-producing techniques.
- Behavioural research builds upon biological and psychosocial models. Research includes studies of behaviour in animal models, health behaviour and coping, life quality and psychosocial aspects associated with somatic illness, clinical communication, professions in the health services, suicidal behaviour, and psychotraumatology.
- Nutrition science includes nutrition biology, molecular nutrition, clinical nutrition research, nutritional epidemiology, diet research, and research on agents for promoting healthy dietary habits in the population.
- Biostatistics, epidemiology and modelling of biological systems includes methodological research in statistics relevant to a number of areas in medicine (measurement error, survival analysis, causal inference, high dimensional models, stochastic models), as well as research in statistical genomics, systems biology, epidemiology, and infectious disease epidemiology modelling.

The professional staffs will actively further develop the various areas of priority.

IMB's prioritized working areas for the period 2010-2013

In order to successfully achieve the objectives described in IMB's visions, and on the basis of the institute's values described above, IMB will pursue the following prioritized, strategic sub-goals under the categories of cooperation, quality, infrastructure, and teaching and dissemination:

Cooperation:

IMB will

- work to expand research cooperation between the institute's research groups
- work to promote increased cooperation between the institute's researchers and researchers in clinical departments
- contribute to the development of an Internet portal which will promote interaction between the basic medical environments in the Oslo area.

Quality

IMB will

- work to ensure that quality in research is prioritized
- work to promote understanding among political authorities and society at large of the central role that basic research plays for good health.
- work to ensure that researchers at the institute are able to compete effectively for research funding from all relevant financial sources
- work to maintain the broad base in research activity within central fields of study at IMB
- seek to reinforce its quality by recruiting the very best researchers and by further developing the competence of its own researchers
- work to ensure that the institute's objectives and areas of priority are central within the topical fields of study at the faculty and in the Research Council of Norway
- make optimal provisions for innovation and commercial development in line with the university's strategy plans and academic priorities.

Infrastructure

IMB will

- work for an economic and organizational infrastructure that will enable achievement of IMB's visions

- work to strengthen the infrastructure and flexibility of ICT services offered
- work for a rational and purposeful use of IMB's current and future physical areas in line with the strategy plan
- work to strengthen the facilities needed to ensure that IMB can remain a leading national actor in the field of animal experimental biomedical research.

Teaching and dissemination

IMB will

- work continually to update research-based teaching both academically and pedagogically, including the development of a new e-learning-based educational platform, in order to raise the competence of the faculty's graduates.
- work to strengthen research education at IMB with a view to recruiting the best qualified researchers.
- stimulate interest in basic medical research by organizing a popular science lecture series, developing a good web-based platform for disseminating research results and otherwise disseminate its activity to the general public.