

## Section of Research, Department of Microbiology Res@MIK

### About the Section

The Section for Research, Department of Microbiology (MIK research) is part of the Clinic for Laboratory Medicine (KLM), Oslo University Hospital. The section is composed of 11 research groups and four project groups.

The section is characterized by excellence in enabling technologies within molecular and computational biology and a strong focus on curiosity driven basic science with a track record of ground-breaking research. Fundamental discoveries of enzyme activities have inspired a wide research portfolio spanning early development to aging and implications for human disease during the entire life course. This strong focus on fundamental research has resulted in the section being awarded a centre of excellence, Centre for Embryology and Healthy Development (CRESCO) that started 1<sup>st</sup> July 2023.

The sections research strategy is aligned with the overall aims at Oslo University Hospital and Clinic of Laboratory Medicine (appendix). The section has additional priorities in three pillars; ground-breaking research, development of talent and innovation.

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### Vision statement

Gjennom banebrytende forskning og utvikling av ny teknologi forbereder vi fremtidens molekylære medisin. Sammen bygger vi ny kunnskap om helse og sykdom i livsløpsperspektiv, utvikler innovativ diagnostikk som gjøres tilgjengelig for pasienter gjennom translasjonsforskning.

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Through ground-breaking research and development of new technology, we develop molecular medicine for the future. Together, we build new knowledge about health and disease in a life-course perspective, we develop effective diagnostics and innovative treatment methods, and work to make these available to patients.

### Res@MIK Strategy 2024-2029

Our research adheres to the vision statement at KLM which is “to generate new knowledge – to the benefit of patients”. The section is an instrument to achieve the overall aim of OUS to strengthen translational research by providing an important link between basic research and clinical practice.

### Our continuous aims and goals

1. We shall conduct outstanding research that generate new knowledge leading to better understanding of disease mechanisms and utilize this knowledge to improve diagnostics, treatment, and prevention of disease.

2. We shall deliver high-quality research throughout the full range of our disciplines, while also focusing on selected strategic research areas;
  - a. genome dynamics in a life course perspective
  - b. molecular microbiology
  - c. precision microbiology
  - d. precision intervention through mechanistic insight for rare diseases
  - e. drug development based on fundamental discoveries on how enzymes work
3. We strive for quality over quantity in research.
4. Research in our section shall be based on a culture of respect and good research conduct according to ethical guidelines.

### **Specific main goals 2024–2029**

#### **1. Strengthen translational research as an important link between basic research and clinical practice.**

- a. We shall develop and implement beyond state-of-the-art technology and make advanced infrastructure available for researchers through our core facilities.
- b. We shall apply the results of research and new technology, to prepare for next generation therapies within the following focus areas:
  - a. Antimicrobial resistance
  - b. Pandemic preparedness
  - c. Genome editing and gene/cell therapies within rare disease
  - d. Early development/fertility
  - e. Precision healthy aging
- c. We shall contribute to regional, national, and international collaboration, including developing synergies between health research and the natural sciences.

#### **4. Conduct systematic career follow-up for researchers**

- a. We shall contribute to good and predictable researcher training in cooperation with the academic institutions.
- b. We shall actively recruit talented researchers and provide good realistic career guidance to researchers throughout their research careers (attach research training document).

#### **5. Secure research activity in new buildings at OUS and the Life Science Building at the University of Oslo**

- a. We shall play a leading role in research-driven innovation by developing technology based ground-breaking research and implementation of technology for precision molecular medicine.
- b. We will contribute to interdisciplinary research and collaboration in LBV, including building an AMR platform and single-cell laboratory in the LVB collaboration with UiO.

- c. We will strengthen collaborations within the department on drug development. This includes but is not restricted to development of therapy resistance (*e.g.* antibiotics and chemotherapy).

**6. Increase focus on clinical research in cooperation with users, business and industry, and the public sector**

- a. We shall focus on the broad involvement of users in different aspects of research.
- b. We shall communicate and share research results – as well as publish them in scientific journals – and communicate the results to patients and society at large in language that is fit for purpose.
- c. We shall be a clear and evidence-based voice in social debates.
- d. We will strive for open research in publication through open access to articles, and by sharing data where possible.