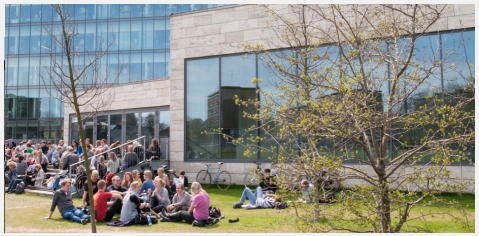
Department of Biology

Vision and Strategy 2024-2030

Better Understanding for a Healthier Planet

UNIVERSITY OF COPENHAGEN

Department of Biology

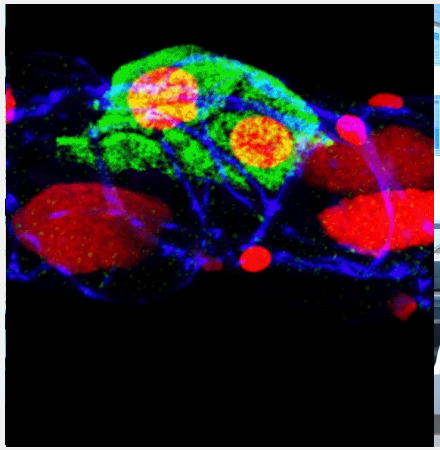


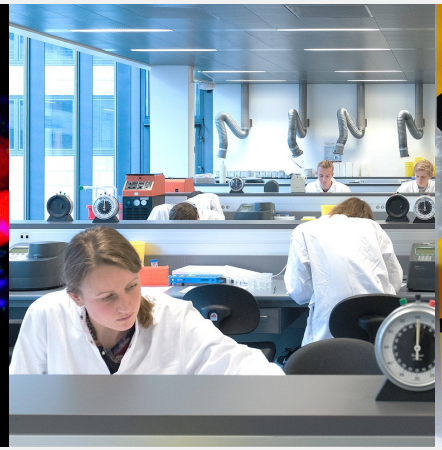
BIO employs over 450 academic, technical and administrative staff and embraces research topics and teaching curricula that cover all major biological sub-disciplines. University rankings typically place the field of biology and biochemistry at the University of Copenhagen first in Denmark and among the top 15-25 universities globally

BIO offers a PhD program, and BSc and MSc programs in Biology, Biochemistry, Molecular Biomedicine, Bioinformatics, engaging around 1,800 students

BIO has large potential for making even stronger impact on society by bringing its expertise further into play within the green transition, climate change mitigation, biodiversity, and human health

Overall ambitions and visions





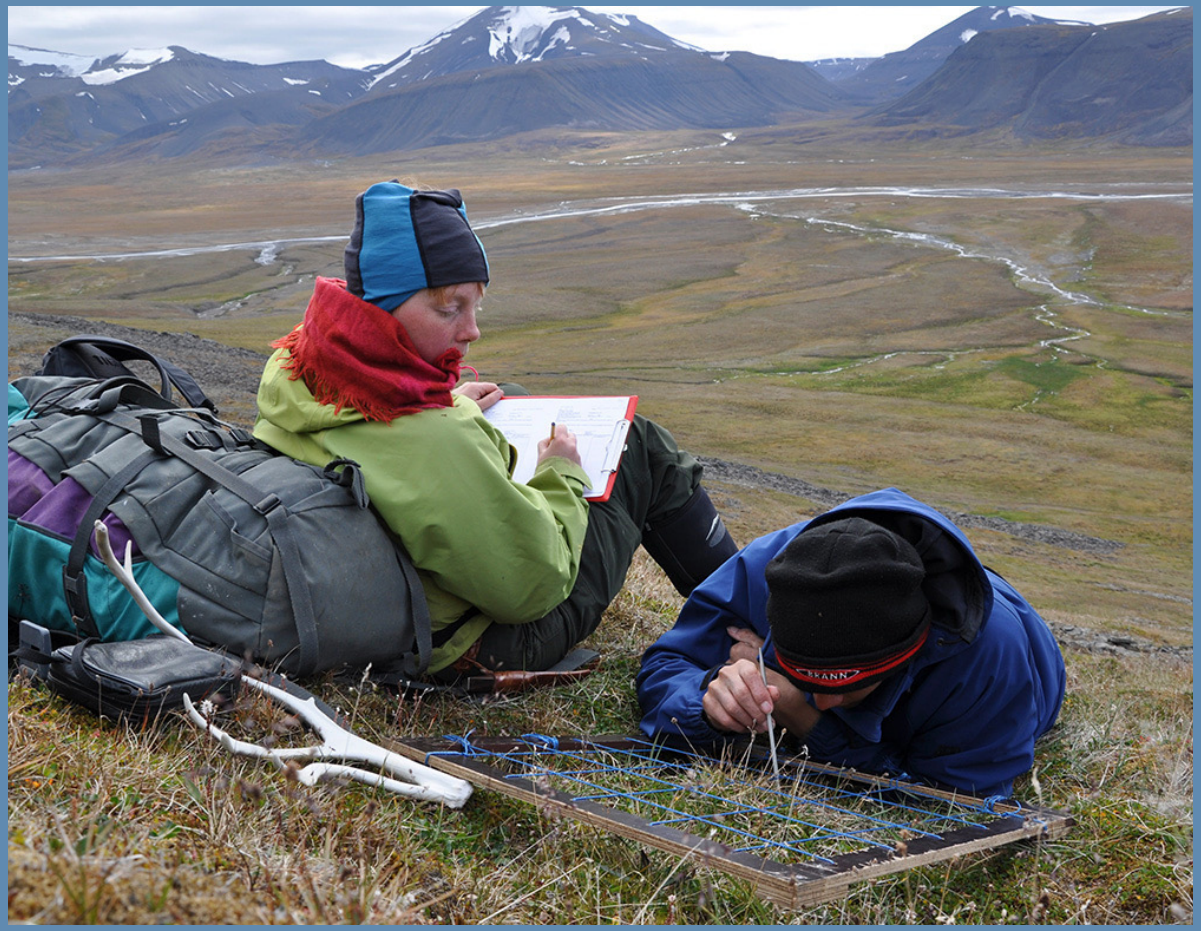
Research	Teaching	Organization
BIO is recognized as one of the World's leading research departments within the biological sciences	Based on strong core disciplines, BIO educates career-ready candidates fulfilling the labor market and societal needs – for instance within the green transition, biodiversity, biotechnological solutions and health	BIO is an international workplace founded on values such as openness, equality, and employee influence. It is an inclusive workplace where diversity is viewed as a strength. Responsibility and awareness for sustainability are integral to all of BIO's activities

Research vision

BIO is recognized as one of the world's leading research departments within the biological sciences

Fundamental biological research is a core strength. When relevant, research is mission-driven and translated into innovative solutions and societal needs in collaboration with the private and public sectors
Synergistic cross-sectional/cross-disciplinary collaboration and knowledge-sharing is a key driver for the development of BIO
BIO has several centers of excellence with the necessary space and infrastructure to house them – and research groups working in related areas are physically located close to each other
Quantitative data analysis and AI are applied in all relevant research fields
BIO has state-of-the art and well-functioning common research infrastructures, for instance in imaging, NMR, sequencing and computation

Research strategy



We will promote curiosity-driven research at the international forefront by i) stimulating faculty to apply for funding from ERC, DNRF and other funding agencies supporting fundamental research, ii) developing and supporting internal cross-disciplinary research clusters to increase knowledge-sharing, iii) investing in state-of-the-art research infrastructures (instrumentation and laboratories), iv) working with SCIENCE and Campus Service to secure future-proof buildings in terms of quality and space, and v) attracting the most talented faculty
We will support initiatives to translate fundamental research into societal impacts in key areas such as the green transition, biodiversity, biotechnological solutions, and health by: (i) expanding cooperation with companies and public authorities; (ii) increasing awareness and emphasis on funding opportunities provided by EU Horizon Europe (Pillar II), BII, and Innovation Fund Denmark (IFD); and (iii) prioritizing active participation in national and international committees and boards (e.g., IPCC, EU committees, national committees)

Teaching vision

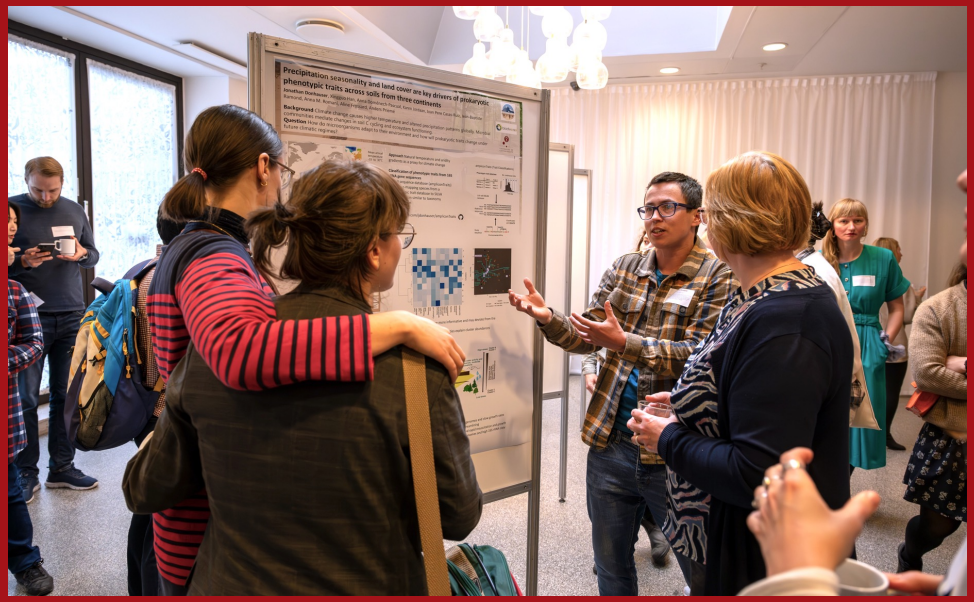
Based on strong core disciplines, BIO educates career-ready candidates fulfilling the labor market and society's needs – for instance within the green transition, biodiversity, biotechnological solutions and health

Study programs are characterized by international excellence at the forefront of scientific and pedagogical developments, and targeted employer and societal needs
Teaching is research driven and integrate fundamental concepts with experimental training. Students learn scientific method and critical thinking. Quantitative skills and digital literacy are of high priority
Superior study environments include optimal physical teaching facilities (classrooms, laboratories, study spaces, social spaces), as well as departmental support for social activities and strong study identity
Teachers are proud of contributing to teaching. They work in teams, and are united in their vision of creating the best courses and educations across the department and in dialogue with the students
Study programs are flexible with wide freedom for students to assemble course curricula guided by career learning. Students are proud of their education and maintain a long-lasting relationship with the department
Life-long learning is provided including tailored courses to the private and public sectors

Teaching strategy

We will support joint teaching efforts through structured discussions with teachers, students, external contributors, and employer panels, and continuously revise courses and study programs to possess high quality, flexibility, and international competitiveness
We will collaborate with SCIENCE and Campus Service to upgrade the physical teaching and study facilities, as well as allocate financial resources to support student social activities
We will financially and administratively support teachers engaging in continued education and develop tailored courses of high relevance to the private and public sectors. BIO will moreover work to change course structures to allow for part- or short-time external participants in current course portfolios

Organisational Vision



BIO is an international workplace founded on values like openness, equality, and employee influence. It is an inclusive workplace where diversity is viewed as a strength. Responsibility and awareness for sustainability are integral to all of BIO's activities

All employees are recognized as important to BIO's goals and ambitions
BIO has a stimulating working environment with opportunities for personal and professional development, and strong internal collaborations
Everyone experiences a satisfactory work/life balance
Everyone has a clear view of work expectations and primarily perform tasks that fit their job description and competences
BIO’s greenhouse gas emissions are reduced by at least 50% relative to emissions in 2018

Organisational Strategy

We will work towards an inclusive and stimulating workspace by i) implementing new onboarding procedures with special emphasis on non-Danish employees and PhD students, ii) implementing actions from the Diversity, Equality & Inclusion (DEI) working group, and iii) prioritizing resources for professional development and social activities
We will work to achieve satisfactory work/life balances and ensure a good alignment between job roles and actual tasks by minimizing administrative burdens, optimizing processes, and collaborating with the future administrative organization to ensure the necessary services
To reduce the climate footprint of the department, we will implement the LEAF criteria in all research laboratories, invest in green(er) research instruments/laboratories, develop a business travel policy, and generally work to ensure that sustainability awareness is high on the agenda for all BIO’s activities

Research sections I

Sections and topics covered

Section (BMS)	Section (CNB)	Section (CBP)	Section (SCARB)	Section (EE)
Biomolecular Sciences	**Cell & Neurobiology**	**Cell Biology & Physiology**	**Computational & RNA Biology**	**Ecology & Evolution**
Research on proteins from protein design over structure and dynamics to their roles in cellular regulation and their synthesis and degradation. Key areas of current research include protein design and enzyme engineering, intrinsically disordered proteins, and the molecular origins of genetic diseases.	Research into organismal growth and physiology from tissue levels to whole-body homeostasis, through local and interorgan signaling and neuropeptides that regulate regeneration, growth, metabolism, and behavior using non-mammalian models, focusing on disease-relevant mechanisms.	Research from the molecular to the organismal level – spanning the fundamental functions of cells, bio-membranes, epithelia, tissues and organs in the context of development, health, physical activity and disease.	Research spans the DNA, RNA and protein worlds and covers a novel methodological spectrum from wet-lab molecular biology to advanced computational model building and statistical inference.	Research on the organisational principles and functional diversity of life from the perspective of population and community ecology, social organisms and cells, evolutionary biology, morphology, biodiversity genomics and animal communication. Applied research in conservation science.

Research sections II

Sections and topics covered

Section (FBS)	Section (FG)	Section (MBS)	Section (MIB)	Section (TE)
Freshwater Biology	**Functional Genomics**	**Marine Biology**	**Microbiology**	**Terrestrial Ecology**
Research on lakes, streams and wetlands, focusing on diversity and communities, adaptations and eco-physiology, and ecosystem processes differing in geographical settings and human or climate impact.	Research with a primarily genetic and genomic approach using suitable model organisms representing the three domains of life: archaea, bacteria, and Eukaryota.	Research on a broad range of aspects in marine biology from microbiology over ecology and evolution to functional biology and physiology relevant to aquaculture, climate change, biodiversity and conservation.	Research on the functional diversity and adaptive potential of microbial communities in soil plants and animals. Under-standing the importance of their interactions in both planktonic state and in biofilms using DNA sequencing, cell-sorting, single-cell detection and bio-imaging.	Research on interactions between environment, soil organisms and plants and their functions. Specialists in volatile organic compound and greenhouse-gas emission, and in nitrogen cycling, dynamic ecosystem modelling, and have international level expertise in plant-ecophysiology, bacteria, fungi, nematodes and protists.

UNIVERSITY OF COPENHAGEN
DEPARTMENT OF BIOLOGY