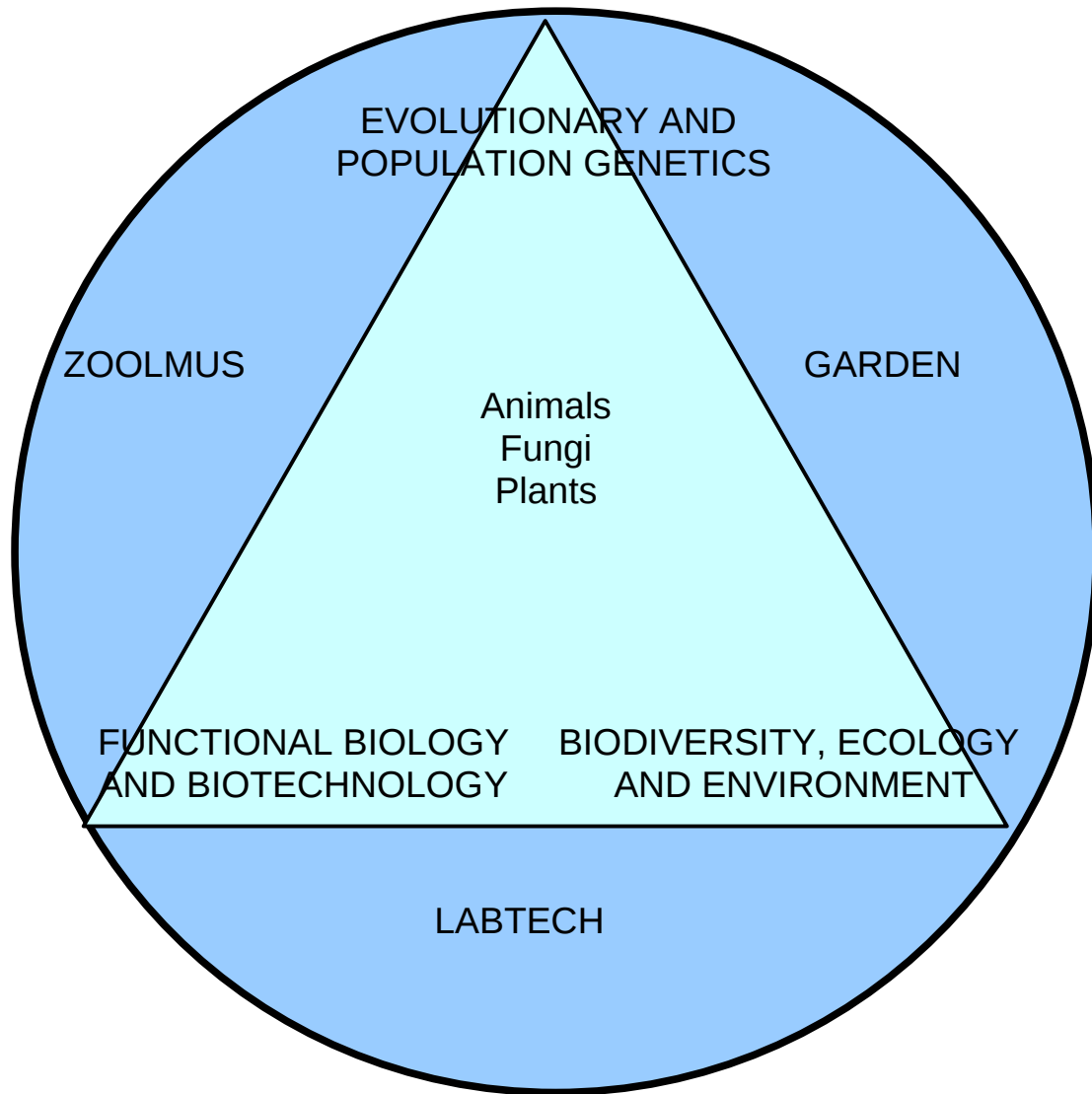


DEPARTMENT OF BIOLOGY IN 2012 – STRATEGIC PLAN



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The strategic plan of the Department of Biology, University of Oulu incorporates an integrated view on the development and future of the department as a unit with a mixture of biological disciplines. The strategy is accompanied by a detailed action plan outlining strategy implementation and associated organisation-wide changes in the management.

Introduction

In the merger of three departments in 1995 the new Department of Biology became one of the largest departments in the University and the third largest biology department in Finland. It includes 150 research and technical staff (81 of which funded on regular budget), approximately 80 research students, and over 250 undergraduates. Since nineties the output in terms of academic productivity indices has markedly elevated. For example, the annual number of articles in international referred journals exceeds 100 and number of doctoral degrees obtained varies between seven and ten. The annual departmental budget totals 7.8 M € including 2.3 M € external funding and 2 M € in the rent of university premises. Departmental changes have been coupled with greater integration through the development of cross-linking themes and stronger connections with other disciplines and with research institutes.

Since 2002 the department has effectively streamlined its structure by signing away one research field station and reducing the number of permanent departmental staff almost by one fifth (100 → 81). This developmental process is still being implemented (see detailed action plan) even though the present day emphasis is on measures improving quality and facilitating cutting-edge research rather than downsizing.

During its short history the Department has harboured one centre of excellence in research, namely Centre of Population Genetic Analyses in 2002-2007. Moreover in 2004-2006 the Department was nominated as one of the national high-quality units in teaching by the Ministry of Education.

In 2007 the University was subjected to the Research Assessment Exercise (RAE). In the review of the Department of Biology the panel recognized three strengths: first, good range of research disciplines, second, diverse research facilities such as museums and botanic garden, and third, close connection to research institutes and other departments. Also three weaknesses were listed: first, insufficient use of molecular and cellular facilities, second, lack of links between research groups and, third, deficit of cutting-edge research excellence.

The purpose of this strategy and the action plan is to outline how the strengths of the Department of Biology are further enhanced and how the weaknesses are alleviated and the performance upgraded in the future. In the increasingly competitive environment the Department is determined to pursue the highest academic standards by means of strategic steering in research, teaching and staff recruitment.

Values and aims

The Department of Biology and its staff endorse the three values of the University of Oulu (collectivity, leadership and companionship) and are committed to:

- i. Exerting leadership in establishing and maintaining high standards of quality in research, education and interaction with the community
- ii. Striving for departmental organisational structures that maximise resources, and opportunities regarding personal and professional development of all staff and students

- iii. Encouraging cutting-edge research and development activities that result in recognised quantity and quality of output that significantly impacts the understanding of biology

Structure

In the past the Department consisted of several divisions but nowadays this administrative subdivision has been abolished for greater unity. The present scientific disciplines (genetics, animal and plant ecology, and animal and plant physiology) form the basis for masters Programmes but do not exercise administrative power.

In the future the Head of the Department (HoD) will be aided by two assistant managers (AMs) whose responsibility will be to lead and coordinate strategy implementation in research (aided by TETR work group) and teaching (OKTR work group).

One of the keys for the better future is successful recruitment of top scientists. A permanent recruitment panel led by HoD will be formed to guide recruitment processes and to boost the attractiveness of the Department for potential high-profile scientists.

Research themes

Research in the Department can be broadly described under three main themes (see cover), which represent core strengths and are largely founded on the University and the Faculty of Science focus areas (gene research, biotechnology as well as Northern issues and environment):

- i. **Evolutionary and population genetics** including also genomics and conservation genetics.
- ii. **Functional biology and green biotechnology** from molecular to organismic level including symbiotic (in its wide sense) interactions.
- iii. **Biodiversity, ecology and environment** including research on plant and animal communities, population biology and conservation biology. The topic also covers research on acclimatization and adaptation to Northern environments.

In the future greater coherence and common goals for the research activities in the Department will be sought. Maintaining this process will be essentially TETR work group's responsibility and, hence, the work group is provided with a power to recommend financial incentives for actions supporting department-wide strategy implementation.

Teaching

In RAE the undergraduate training was regarded as well organised and coordinated. In principle students will follow two somewhat separate lines to the B.Sc. level (Ecology and Biosciences) and after that adopt one of the five M.Sc. programmes. B.Sc. and M.Sc. studies are supported by a set of special seminars providing intensive teaching and guidance. In the future all M.Sc. programmes will be available in English in order to boost the recruitment of international students.

Ph.D. studies and supervision has been recently under strong development. For example, every student must now have a follow-up group formed by senior academics that will meet annually. Moreover, special seminars and introductory essays have been adopted in order to speed up doctoral studies.

Collaboration

Working in collaboration with other disciplines and other institutions has traditionally been very intense. For example, at the moment there are two joint professorships with two different research institutes in the Department. At the national level research institutes and organisations are currently joining forces with universities and the Department of Biology is viewing this trend as an opportunity rather than a threat. Moreover, the department has been successful in communicating and relating the value of science to the local community and will continue to do so.

Our researchers collaborate with partners around the world. International activity both at the Departmental level (e.g. exchange programmes) as well among research groups and scientists is essential for a university in a small country. Departmental staff is involved in several large research programmes and scientific networks funded by prominent international sources such as the EU. Our students are also encouraged for greater international mobility. Recently several connections have been established with developing countries (e.g. with Wildlife Institute of India) with great expectations to expansion in exchange of researchers and students.

Facilities and infrastructure

Departmental infrastructure and the support units are regarded as a key asset for research and teaching as well as for recruitment of scientific staff. The department will continue to provide up to date teaching and research equipment in the future. Moreover, in the face of soaring cost of modern research infrastructure deeper collaboration in the use of expensive equipment is pursued both nationally (other Finnish universities, polytechnics and research institutes) and internationally.

The department has aimed at creating a couple of integrated facilities to support research and teaching. At the moment the department includes two support units: ZOOLMUS (inc. Zoological Museum, the Experimental Unit and the Bothnian Bay Research Station) and GARDEN (inc. Botanical Gardens and Botanical Museum). These units also provide public service and therefore receive substantial funding directly from the University. Possibilities for greater integration of these units, with regards to their functions as natural history showrooms, into a larger network or entity are under scrutiny (e.g. Finnish Natural History Museum).

A new support unit called LABTECH will be formed to include all laboratory and technical staff in order to increase more flexible allocation of workforce for research projects throughout the department. The new unit will be led by one of the AMs.

Some 'non-biological' supporting functions such as computing administration has been outsourced and are now provided by the University IT Administration Services.

APPENDIX I

Action plan: new developments in addition to the existing projects

Structure:

- new management: a system with HoD and two AMs with specified responsibilities
- balancing the budget: further reduction of the number of budget staff to the level of approx. 70, this reduction, however, should not distort the ratio of academic and technical staff
- lectureships will be changed to positions including both teaching and research duties
- departmental divisions are no longer administrative subunits
- new task forces (TETR and OKTR) to control strategy implementation
- new support unit (LABTECH)

Teaching and research:

- master's programmes available in English
- all academic staff teach, including minor teaching duties for research students and full-time researchers
- international exchange programmes utilised more effectively in recruitment
- several lecture series are replaced by textbooks and more independent studies with computer-aided learning platforms are offered
- updating and modernizing teaching and research equipment
- 'intensive care' seminars for all levels (B.Sc, M.Sc and Ph.D) to speed up and encourage final steps to graduation
- two new courses on molecular methods for all biology students (see RAE criticism #1)
- students' commitment to the Department and the strategy enhanced by greater involvement in decision making and increased information availability
- closer integration of GARDEN and ZOOLMUS with teaching units and research groups
- competitiveness in attracting external funding will be taken into account in allocation of departmental resources
- department promotes high-level scientific seminars

Collaboration (new openings that will complement the well-established international and national scientific collaboration)

- joint professorships are continued with the Finnish Forest Research and the Finnish Environment Institutes as well as joint laboratory technician with the Food Safety Authority
- new collaboration agreement with the Polytechnics School of Renewable Natural Resources (GARDEN)
- collaboration with the physiologists of the Department of Biomedicine in research and teaching is negotiated
- collaboration with the Game and Fisheries Research Institute (ZOOLMUS)
- enhanced coordination of GARDEN and ZOOLMUS with the Finnish Museum of Natural History is negotiated
- growth and development of international collaboration including EU Framework Programmes fostered at all levels
- department involved in several international infrastructure and research initiatives (e.g. Nordic Innovation Centre Programmes and Long-Term Socioecological Monitoring Network)