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STRATEGY OF THE FACULTY OF SCIENCE
AND FORESTRY FOR 2015–2020

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UEF // University of Eastern Finland

I Background

OPERATING ENVIRONMENT, MISSION, TASKS, VALUES AND VISION

THE MISSION of the Faculty is to provide education and conduct research in natural sciences and forestry which are of a high academic standard and have a strong impact on the society.

The vision of the Faculty is to achieve excellence in research and education. This is manifested in the highest indicators of cutting-edge research, as competent master's and doctoral degree graduates, satisfied students and employees, active societal activity and stable finances.

BACKGROUND INFORMATION

FACULTY OF SCIENCE AND FORESTRY
Administration Service Centre
<ul style="list-style-type: none">▶ Department of Physics and Mathematics▶ Department of Applied Physics▶ Department of Chemistry▶ School of Forest Sciences▶ School of Computing▶ Department of Environmental and Biological Sciences
Mekrijärvi Research Station
SIB Labs

63	PROFESSORS
9	ASSOCIATE PROFESSORS
560	OTHER MEMBERS OF THE STAFF
158	INTERNATIONAL EXCHANGE STUDENTS
494	POSTGRADUATE STUDENTS
3802	BACHELOR'S AND MASTER'S DEGREE STUDENTS (INCLUDES 343 INTERNATIONAL STUDENTS)

II Current situation

BACHELOR'S AND MASTER'S DEGREE EDUCATION

THE FACULTY consists of six departments offering education. The major subjects are biology, physics, chemistry, mathematics and forest science (Joensuu campus), applied physics, environmental science (Kuopio campus) as well as computer science (both campuses). At the beginning of 2016, the Departments of Biology and Environmental Sciences formed a joint Department of Environmental and Biological Sciences. The Faculty has 12 international Master's Degree Programmes, which have produced, on average, 75 master's graduates a year.

POSTGRADUATE DEGREE EDUCATION

THE AIM of postgraduate degree education is to train excellent researchers and experts in the international environment of the scientific units. In the Faculty, it is also possible to complete medical physicist specialisation studies in the form of professional postgraduate education. Postgraduate education in the Faculty is organised under three Doctoral Degree Programmes.

RESEARCH

BETWEEN 2010 AND 2014, research activities in the Faculty of Science and Forestry have focused strongly on the University's strategic research areas. The highest standard of research between 2010 and 2015 is reflected by

- › Two centres of excellence of the Academy of Finland
- › Two ERC starting grants
- › Project of the Academy of Finland's Strategic Research Council
- › High standard of publications

The Faculty of Science and Forestry is a key implementer of the strategy of the UEF in the following top-level international research areas (Faculty's units involved)

- › Aerosols, Climate Change and Human Health (applied physics, environmental science)
- › Forests, Global Change and Bioeconomy (forest science, biology)

Advanced-level research areas developed by the Faculty in line with the strategy of the UEF include

- › Photonics – Theory, Materials and Applications (physics and mathematics, chemistry, computer science, biology)
- › Translational Cancer Research (environmental science)
- › Musculoskeletal Disorders (applied physics, physics and mathematics)

University of Eastern Finland has identified as emerging research areas in line with its strategy for 2015–2018

- › Methods and Applications of Uncertainty Modelling (applied physics)
- › Aquatic Research in Changing World (biology, environmental science, applied physics)

Faculty of Science and Forestry has itself identified the forest-based bioeconomy as a promising emerging research area.

The expertise and equipment infrastructure of the Faculty are brought together in its infrastructural unit SIB Labs, which is tasked with promoting the transfer of technologies in the field and serving the research needs of research units and industrial partners. The Faculty's significant infrastructure is involved in both European and national research infrastructure networks.

SOCIAL INTERACTION

THE FACULTY'S EDUCATION produces high-quality specialists in their fields for industry, administration, schools and hospitals. Staff are regularly involved in regional, national and international specialist working groups. The Faculty endeavours to utilise the results of research commercially in co-operation with businesses, technology centres and funding bodies. Attention is paid to entrepreneurial skills in postgraduate education. The Faculty's high standard of expertise has given rise to companies and jobs based on academic know-how in Eastern Finland.

DIRECTION 2020

UEF // University of Eastern Finland // Faculty of Science and Forestry
STRATEGY FOR 2015–2020: TOWARDS THE FUTURE THROUGH SCIENCE

/2015

Our CHALLENGE

Environment | Natural Resources | Technology

STRATEGY IMPLEMENTORS
STAFF | STUDENTS



KEY SUCCESS FACTORS
expertise – motivation – commitment

/2020

Our strategic OBJECTIVES

UEF =



The UEF is internationally renowned for

- *Specialists in science and forestry for the needs of the changing world of work*
- *Focused and internationally impressive research*

**MOST
ATTRACTIVE**

Produces and disseminates research data and knowhow in its fields of expertise for the needs of the changing society

50 *Among the world's 50 best universities in our areas of expertise*

Strategic research areas

UEF // International excellence

- > Aerosols, climate change and human health
- > Forests, global change and bioeconomy

UEF // Advanced-level and strong

- > Photonics
- > Translational cancer research
- > Musculoskeletal disorders

UEF // Emerging areas

- > Methods and applications of uncertainty modelling
- > Aquatic research in changing world

The highest standard of research is reflected by

- > Two centres of excellence of the Academy of Finland
- > Two ERC starting grants
- > Project of the Academy of Finland's Strategic Research Council
- > High standard of publications



Efficient and high-quality DOCTORAL EDUCATION

- > 3 doctoral programmes
- > High standard of education
- > First-class learning environment
- > Student-centred supervision
- > Hospital physicist training

RESEARCH INFRASTRUCTURES

- > Aerosol physics, chemistry and toxicology research unit ILMARI
- > ANAEE-Finland (Analysis and Experimentation on Ecosystems)
- > Integrated atmospheric and earth system science research infrastructure - INAR
- > Integrated carbon observation system - ICOS
- > Controlled growth environments
- > Infrastructure for materials research
- > Structural Biology Centre
- > Spectromics Laboratory

Education

OBJECTIVES

Excellence of education in its field.
High-quality international
Master's degree programmes.
Modern, renewing and flexible
learning contents and environments.

Biology | Physics | Chemistry
Mathematics | Forest Science
Applied physics | Environmental Science
Computer Science

216

BACHELOR'S DEGREES
(2015)

252

MASTER'S DEGREES
(2015)

63

DOCTORAL DEGREES
(2015)

III Objectives and indicators

BACHELOR'S AND MASTER'S DEGREE EDUCATION

THE FACULTY educates specialists for the changing world of work in the future and also provides a comprehensive foundation for postgraduate education. The learning environments and teaching methods are up-to-date, effective and motivating. The curricula for the Bachelor's and Master's education programme and for the (international) Master's degree programmes are attractive, competitive, flexible, varied and clear. Teaching is being developed through the use of new educational technologies. The progress of studies is monitored and supported efficiently.

Bachelor's and Master's degree education – key indicators and target values

INDICATOR	OBJECTIVE
Bachelor's degrees	180
Master's degrees	250
55 ECTS credits completed/all Bachelor's and Master's degree students (%)	30.0

POSTGRADUATE DEGREE EDUCATION

THE FACULTY has three doctoral programmes

- › Doctoral Programme in Science, Technology and Computing (SCITECO)
- › Doctoral Programme in Environmental Physics, Health and Biology (EPHB)
- › Doctoral Programme in Forests and Bioresources (FORES)

The doctoral programmes provide more systematic, student-centred supervision in higher-quality learning environments.

International recruitment channels are utilised to recruit postgraduate students.

International education is development target. We focus primarily on projects funded through the EU's Horizon 2020, Erasmus+ and similar programmes.

Postgraduate degree education – key indicators and target values

INDICATOR	OBJECTIVE
Doctoral degrees	61
Doctorates completed by foreign degree students	25
Doctoral degrees/research career IV (i.e. professors and associate professors)	0.89
Average time to complete a doctoral degree (academic year)	4

RESEARCH

RESEARCH IN THE FACULTY is focused on the areas laid down in the strategies of the University and of the Faculty. In addition to these areas, the units conduct top-level research in method-based fields whose applications are actively directed to strong research areas.

Recruitment in the Faculty is international and conducted primarily in strong research areas. The tenure track procedure is applied actively.

The productivity of research in the Faculty is measured regularly using recognised indicators which describe the quality of the research and the researchers.

Research – key indicators and target values

INDICATOR	OBJECTIVE
Peer-reviewed scientific publications	800
EU's Framework Programme projects	*
ERC funding schemes	4
Centres of excellence of the Academy of Finland	3
Academy professors	2
Academy researchers	*
Academy post-doctoral researchers	*

* The objective will be determined in 2016

SOCIAL INTERACTION

- The Faculty presents itself as an important operator in society.
- The Faculty's staff are actively engaged in national and international specialist tasks.
- The Faculty's research give rise to invention disclosure notifications, patents and spin-off companies.
- The Faculty organises international academic conferences.

Social interaction – key indicators and target values

INDICATOR	OBJECTIVE
International education and development co-operation projects (€ million)	1.0
Memberships in committees of the Academy of Finland	2
International academic conferences	15

FUNDING

Effort is expended to acquire external funding. For example, the aim is to continue to improve funding from the EU's Framework Programme and from the Academy of Finland.

Funding – key indicators and target values

INDICATOR	OBJECTIVE
Research funding competed for internationally (€ million)	4.0
Funding from the Academy of Finland (€ million)	10.0
Tekes funding (€ million)	2.0

HUMAN RESOURCE DEVELOPMENT

THE OBJECTIVE is for the Faculty's staff to be motivated, of a high standard academically and exemplary in terms of teaching. The University's strategic goals are supported through staff recruitment. The work community is motivating and equal, and well-being at work is at high level in all personnel groups.

IV Monitoring and feedback

THE FACULTY monitors the implementation of its strategy by means of annual Management Reviews. If necessary, actions are then planned to address shortcomings.

SMART *SCIENCE* BY SMART PEOPLE.



UNIVERSITY OF
EASTERN FINLAND

University of Eastern Finland

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