

CASE STUDIES IN BIOETHICAL RESEARCH EDUCATION

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GRADUATE SCHOOL SYSTEM IN FINLAND

- PhD programs established by the Ministry of Education in 1995
- 124 graduate schools in 2006
- all universities
- all disciplines
- each school around thematic area
- local graduate schools in Biocenters (20%)
- national network graduate schools (80%)

CONTENTS OF PhD DEGREE

- Thesis
 - research work ($\geq 75\%$ of the doctoral degree)
 - 3-4 original publications in peer-reviewed international journals
 - Formal education (60 ECTS points)
 - ca. 25% of the doctoral degree
 - practical courses
 - lecture courses
 - workshops
 - seminars & symposia
- aim to complete the degree in four years
- provided by the graduate schools

AIMS OF THE GRADUATE SCHOOL SYSTEM

- formal training more systematic and efficient
- increase the number of PhDs (1600 PhDs/year by 2008)
- decrease time spent for the PhD degree (aim 4 years)
- lower the median age of new PhDs (aim 30 years)
- improve supervision
- promote national and international collaboration

CHARACTERISTICS OF GRADUATE SCHOOLS

- status based on competition
 - competition at the graduate school level:
 - Ministry of Education funded graduate school salaries
 - Graduate school course funding from the Academy of Finland
 - competition at the student level:
 - 4-year graduate school salaries (total of 1458 posts in 2006) & 4-year matching funds student positions (ca. 3000 in 2006)
- open call for students - entry upon application and selection (admission ca. 20 %)
- international aspect
- light administration

VGSB - VIKKI GRADUATE SCHOOL IN BIOSCIENCES

www.biocenter.helsinki.fi/viikkigs/

- Established in 1.1.1999 as the initiative of Viikki Research Group Organization in Molecular Biosciences
- Local graduate school – operates in the Viikki Campus of the University of Helsinki
- A faculty-independent unit
- Financed largely by the Ministry of Education (four-year PhD student salaries) and the Academy of Finland (courses & travel)
- 54 students within the 4-year grad school period (Oct 2006) - about 50% on the MoE funded positions and 50% by the research groups
- Dean Prof. Marja Makarow, Co-ordinator Dr. Eeva Sievi
- VGSB-associated privileges for the students
 - VGSB courses (60 ECTS required for the PhD degree) & events
 - travel grants for participating international conferences and courses
 - Follow-up group for support

VGSB's EDUCATIONAL PROGRAM

(for details, see <http://www.biocenter.helsinki.fi/viikkigs/fall2006.htm>)

• RESEARCH FIELDS REPRESENTED BY VGSB

- cell biology
 - developmental biology
 - plant molecular biology
 - bacteriology
 - virology
 - structural biology & biophysics
 - bioinformatics
 - genetics and genomics
- laboratory courses
 - lecture courses
 - seminar series
 - workshops
 - symposia

• TRANSFERABLE SKILLS in e.g.

- bioethics
- biobusiness
- professional writing
- presentation skills
- pedagogics

VGSB WORKSHOP ON BIOETHICS

1st WORKSHOP in April-October, 2003

- to address and discuss ethical questions in today's bioscientific research, eg.
 - what do we understand with the term 'bioethics'?
 - is an embryo a human being?
 - can animal organs be transplanted to humans?
- interdisciplinary approach – students from the fields of social ethics and biosciences
- organized in collaboration with the Dept. of Systematic Theology, Univ. Helsinki & Life 2000, Academy of Finland
- max. number of course participants 20

STRUCTURE OF THE 1st WORKSHOP:

- 1) Master theses of students in social ethics used as case studies, topics in
 - feminist bioethics
 - xenotransplantation
 - embryos & stem cell research
 - concept of bioethics
- 2) the Master thesis of interest chosen by the students in biosciences
 - small discussion groups formed around each Master thesis
 - extensive studying of the Master thesis during the summer
- 3) final discussion with all course participants
 - 'the public defence' of each Master thesis
 - a panel of bioscientists questioning the owner of the work
 - general discussion
- 4) written evaluation of the Master thesis including revision of the bioscientific facts presented in the thesis

2nd WORKSHOP in 2004-2005

- case studies & theory
- for PhD students in social and biological sciences
- organized in collaboration with the Dept. of Systematic Theology, Univ. Helsinki
- max. number of course participants 20

STRUCTURE OF THE 2nd WORKSHOP:

- 1) case studies: research plans of PhD students in biosciences, topics in the field of
 - plant biology
 - virology
 - bacteriology
 - 2a) international symposium 'Twenty years of GM-plants – how do legislation, ethics and science combine'
 - 2b) lectures
 - science and society
 - ethical principles of science
 - ethical analysis
 - bio-legislation
 - GMO legislation
- } theoretical part

CASE STUDIES:

- bioethical perspective to the research plans
 - discussion and analysis of the case of interest in small groups
 - students representing both biological and social sciences in each group
 - theoretical background from the lectures
- final discussion - introduction of the 'ethical evaluation' of the chosen case by each group
 - for panel discussion
 - for general discussion with all course participants

FEEDBACK & COURSE EVALUATION

GENERAL

- small group size important
- participation not obligatory
- case-study structure
- interdisciplinary approach
- beneficial for each party
 - students in social sciences
 - biological facts in their Master thesis checked
 - bioscientific research *in situ*
 - students in biosciences
 - new perspective to bioscientific research in general
 - new perspective to their own PhD projects

STUDENT FEEDBACK

POSITIVE:

- interesting and extremely important
 - beneficial to each participant
 - wider/new perspective to bioscientific research
 - new viewpoints to own PhD project
 - science and society
 - case-study discussions in small groups and the final discussion with all course participants extremely fruitful and enjoyable – 'best part of the course'
 - lectures supporting the case study work
 - course atmosphere – mixture of students with different backgrounds
 - 'big enrichment to my daily work'
- such courses should be introduced to all fields in natural sciences

NEGATIVE:

- few students were not totally happy with all the lectures

SUCCESS DUE TO:

- 1) highly motivated students
- 2) interactive format
- 3) small group size
- 4) different backgrounds of the participants
- 5) great collaborators - thanks!!

IN ADDITION eg.

- FinBioNet National PhD Student Symposium – Life Sciences in Today's Society, Oct 9-10, 2006, Turku
- Ethics in biological research, international symposium 2003
- occasional lecture courses

→ systematic training missing

WORKING GROUP IN RESEARCH ETHICS

- appointed by the Rector Ilkka Niiniluoto, University of Helsinki in June 2004
- recommendation (October 2005): education in research ethics is to be integrated in the basic university degree, as well as in the educational program of each graduate school

FUTURE

- 1) lecture courses in bioethics, in collaboration with the Helsinki Life Science Network of Graduate Schools (every year)
 - open for all interested participants
- 2) followed by VGSB's 'Workshop on Bioethics' (every 1-2 years)
 - open for students with the highest interest in bioethics
- 3) participation in international conferences/ workshops encouraged

ERA-SAGE - European Research Area on Societal Aspects of Genomics (<http://www.erasage.org/>)

- International network of funding agencies (11) - Academy of Finland as the Finnish partner
 - aims to promote the awareness of ethical, legal and social aspects of genomics amongst the researchers and the public
 - ultimate goal a common EU-funded call in the field
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- includes an educational aspect
 - adaptation of best practises within the partnering countries
 - collaboration & networking
 - 1st joint pilot activity under construction