INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI 2005–2010

RC-Specific Evaluation of EGRU – Ecological Genetics Research Unit

Seppo Saari & Antti Moilanen (Eds.)
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Researchers Community (RC) was a new concept of the participating unit in the evaluation. Participation in the evaluation was voluntary and the RCs had to choose one of the five characteristic categories to participate.

Evaluation of the Researchers Community was based on the answers to the evaluation questions. In addition a list of publications and other activities were provided by the TUHAT system. The CWTS/Leiden University conducted analyses for 80 RCs and the Helsinki University Library for 66 RCs.

Panellists, 49 and two special experts in five panels evaluated all the evaluation material as a whole and discussed the feedback for RC-specific reports in the panel meetings in Helsinki. The main part of this report is consisted of the feedback which is published as such in the report.

Chapters in the report:
1. Background for the evaluation
2. Evaluation feedback for the Researchers Community
3. List of publications
4. List of activities
5. Bibliometric analyses

The level of the RCs' success can be concluded from the written feedback together with the numeric evaluation of four evaluation questions and the category fitness. More conclusions of the success can be drawn based on the University-level report.

RC-specific information:

Main scientific field of research: Biological, Agricultural and Veterinary Sciences

RC-specific keywords: amphibians, adaptation, birds, evolution, ecological genetics, evolutionary ecology, fish, fisheries, population genetics, genomics, quantitative genetics

Participation category:
1. Research of the participating community represents the international cutting edge in its field

RC's responsible person: Merila, Juha

Keywords: Research Evaluation, Meta-evaluation, Doctoral Training, Bibliometric Analyses, Researchers Community

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Enquiries: seppo.o.saari@helsinki.fi

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The evaluation of research and doctoral training is being carried out in the years 2010–2012 and will end in 2012. The steering group appointed by the Rector in January 2010 set the conditions for participating in the evaluation and prepared the Terms of Reference to present the evaluation procedure and criteria. The publications and other scientific activities included in the evaluation covered the years 2005–2010.

The participating unit in the evaluation was defined as a Researcher Community (RC). To obtain a critical mass with university-level impact, the number of members was set to range from 20 to 120. The RCs were required to contain researchers in all stages of their research career, from doctoral students to principal investigators (PIs). All in all, 136 Researcher Communities participated in this voluntary evaluation, 5857 persons in total, of whom 1131 were principal investigators. PIs were allowed to participate in two communities in certain cases, and 72 of them used this opportunity and participated in two RCs.

This evaluation enabled researchers to define RCs from the “bottom up” and across disciplines. The aim of the evaluation was not to assess individual performance but a community with shared aims and researcher-training activities. The RCs were able to choose among five different categories that characterised the status and main aims of their research. The steering group considered the process of applying to participate in the evaluation to be important, which lead to the establishment of these categories. In addition, providing a service for the RCs to enable them to benchmark their research at the global level was a main goal of the evaluation.

The data for the evaluation consisted of the RCs’ answers to evaluation questions on supplied e-forms and a compilation extracted from the TUHAT – Research Information System (RIS) on 12 April 2011. The compilation covered scientific and other publications as well as certain areas of scientific activities. During the process, the RCs were asked to check the list of publications and other scientific activities and make corrections if needed. These TUHAT compilations are public and available on the evaluation project sites of each RC in the TUHAT-RIS.

In addition to the e-form and TUHAT compilation, University of Leiden (CWTS) carried out bibliometric analyses from the articles included in the Web of Science (WoS). This was done on University and RC levels. In cases where the publication forums of the RC were clearly not represented by the WoS data, the Library of the University of Helsinki conducted a separate analysis of the publications. This was done for 66 RCs representing the humanities and social sciences.

The evaluation office also carried out an enquiry targeted to the supervisors and PhD candidates about the organisation of doctoral studies at the University of Helsinki. This and other documents describing the University and the Finnish higher education system were provided to the panellists.

The panel feedback for each RC is unique and presented as an entity. The first collective evaluation reports available for the whole panel were prepared in July–August 2011. The reports were accessible to all panel members via the electronic evaluation platform in August. Scoring from 1 to 5 was used to complement written feedback in association with evaluation questions 1–4 (scientific focus and quality, doctoral training, societal impact, cooperation) and in addition to the category evaluating the fitness for participation in the evaluation. Panellists used the international level as a point of comparison in the evaluation. Scoring was not expected to go along with a preset deviation.

Each of the draft reports were discussed and dealt with by the panel in meetings in Helsinki (from 11 September to 13 September or from 18 September to 20 September 2011). In these meetings the panels also examined the deviations among the scores and finalised the draft reports together.

The current RC-specific report deals shortly with the background of the evaluation and the terms of participation. The main evaluation feedback is provided in the evaluation report, organised according to the evaluation questions. The original material provided by the RCs for the panellists has been attached to these documents.
On behalf of the evaluation steering group and office, I sincerely wish to thank you warmly for your participation in this evaluation. The effort you made in submitting the data to TUHAT-RIS is gratefully acknowledged by the University. We wish that you find this panel feedback useful in many ways. The bibliometric profiles may open a new view on your publication forums and provide a perspective for discussion on your choice of forums. We especially hope that this evaluation report will help you in setting the future goals of your research.

Johanna Björkroth
Vice-Rector
Chair of the Steering Group of the Evaluation

Steering Group of the evaluation
Steering group, nominated by the Rector of the University, was responsible for the planning of the evaluation and its implementation having altogether 22 meetings between February 2010 and March 2012.

Chair
Vice-Rector, professor Johanna Björkroth

Vice-Chair
Professor Marja Airaksinen

Chief Information Specialist, Dr Maria Forsman
Professor Arto Mustajoki
University Lecturer, Dr Kirsi Pyhältö
Director of Strategic Planning and Development, Dr Ossi Tuomi
Doctoral candidate, MSocSc Jussi Vauhkonen
Panel members

CHAIR
Professor Ary A. Hoffman
Ecological genetics, evolutionay biology, biodiversity conservation, zoology
University of Melbourne, Australia

VICE-CHAIR
Professor Barbara Koch
Forest Sciences, remote sensing
University of Freiburg, Germany

Professor Per-Anders Hansson
Agricultural engineering, modeling, life cycle analysis, bioenergy
Swedish University of Agricultural Sciences

Professor Danny Huylebroeck
Developmental biology
Katholieke Universiteit Leuven, Belgium

Professor Jonathan King
Virus assembly, protein folding
Massachusetts Institute of Technology MIT, USA

Professor Hannu J.T. Korhonen
Functional foods, dairy technology, milk hygiene
MTT Agrifood Research Finland

Professor Kristlina Kruus
Microbiological biotechnology, microbiological enzymes, applied microbiology
VTT Technical Research Centre of Finland

Professor Joakim Lundeberg
Biochemistry, biotechnology, sequencing, genomics
KTH Royal Institute of Technology, Sweden

Professor Dominiek Maes
Veterinary medicine
Ghent University, Belgium

Professor Olli Saastamoinen
Forest economics and policy
University of Eastern Finland

Professor Kai Simons
Biochemistry, molecular biology, cell biology
Max-Planck-Institute of Molecular Cell Biology and Genetics, Germany

The panel, independently, evaluated all the submitted material and was responsible for the feedback of the RC-specific reports. The panel members were asked to confirm whether they had any conflict of interests with the RCs. If this was the case, the panel members disqualified themselves in discussion and report writing.

Added expertise to the evaluation was contributed by the members from the other panels and by one evaluator outside the panels.
External Expert
Professor Anders Linde
Oral biochemistry
Faculty of Odontology
Göteborg University
Sweden

Experts from the Other Panels
Professor Caitlin Buck, from the Panel of Natural Sciences
Professor Ritske Huismans, from the Panel of Natural Sciences
Professor Johanna Ivaska, from the Panel of Medicine, biomedicine and health sciences
Professor Lea Kauppi, from the Panel of Natural Sciences
Professor Holger Stark, from the Panel of Natural Sciences
Professor Peter York, from the Panel of Medicine, biomedicine and health sciences

EVALUATION OFFICE
Dr Seppo Saari, Doc., Senior Adviser in Evaluation, was responsible for the entire evaluation, its planning and implementation and acted as an Editor-in-chief of the reports.
Dr Eeva Sievi, Doc., Adviser, was responsible for the registration and evaluation material compilations for the panellists. She worked in the evaluation office from August 2010 to July 2011.
MSocSc Paula Ranne, Planning Officer, was responsible for organising the panel meetings and all the other practical issues like agreements and fees and editing a part the RC-specific reports. She worked in the evaluation office from March 2011 to January 2012.
Mr Antti Moilanen, Project Secretary, was responsible for editing the reports. He worked in the evaluation office from January 2012 to April 2012.

TUHAT OFFICE
Provision of the publication and other scientific activity data
Mrs Aija Kaitera, Project Manager of TUHAT-RIS served the project ex officio providing the evaluation project with the updated information from TUHAT-RIS. The TUHAT office assisted in mapping the publications with CWTS/University of Leiden.
MA Liisa Ekebom, Assisting Officer, served in TUHAT-RIS updating the publications for the evaluation. She also assisted the UH/Library analyses.
BA Liisa Jäppinen, Assisting Officer, served in TUHAT-RIS updating the publications for the evaluation.

HELSINKI UNIVERSITY LIBRARY
Provision of the publication analyses
Dr Maria Forsman, Chief Information Specialist in the Helsinki University Library, managed with her 10 colleagues the bibliometric analyses in humanities, social sciences and in other fields of sciences where CWTS analyses were not applicable.
Acronyms and abbreviations applied in the report

External competitive funding
AF – Academy of Finland
TEKES - Finnish Funding Agency for Technology and Innovation
EU - European Union
ERC - European Research Council
International and national foundations
FP7/6 etc. /Framework Programmes/Funding of European Commission

Evaluation marks
Outstanding (5)
Excellent (4)
Very Good (3)
Good (2)
Sufficient (1)

Abbreviations of Bibliometric Indicators
P - Number of publications
TCS – Total number of citations
MCS - Number of citations per publication, excluding self-citations
PNC - Percentage of uncited publications
MNCS - Field-normalized number of citations per publication
MNJS - Field-normalized average journal impact
THCPI0 - Field-normalized proportion highly cited publications (top 10%)
INT_COV - Internal coverage, the average amount of references covered by the WoS
WoS – Thomson Reuters Web of Science Databases

Participation category
Category 1. The research of the participating community represents the international cutting edge in its field.
Category 2. The research of the participating community is of high quality, but the community in its present composition has yet to achieve strong international recognition or a clear break-through.
Category 3. The research of the participating community is distinct from mainstream research, and the special features of the research tradition in the field must be considered in the evaluation.
Category 4. The research of the participating community represents an innovative opening.
Category 5. The research of the participating community has a highly significant societal impact.

Research focus areas of the University of Helsinki
Focus area 1: The basic structure, materials and natural resources of the physical world
Focus area 2: The basic structure of life
Focus area 3: The changing environment – clean water
Focus area 4: The thinking and learning human being
Focus area 5: Welfare and safety
Focus area 6: Clinical research
Focus area 7: Precise reasoning
Focus area 8: Language and culture
Focus area 9: Social justice
Focus area 10: Globalisation and social change
1 Introduction to the Evaluation

1.1 RC-specific evaluation reports

The participants in the evaluation of research and doctoral training were Researcher Communities (hereafter referred to as the RC). The RC refers to the group of researchers who registered together in the evaluation of their research and doctoral training. Preconditions in forming RCs were stated in the Guidelines for the Participating Researcher Communities. The RCs defined themselves whether their compositions should be considered well-established or new.

It is essential to emphasise that the evaluation combines both meta-evaluation\(^1\) and traditional research assessment exercise and its focus is both on the research outcomes and procedures associated with research and doctoral training. The approach to the evaluation is enhancement-led where self-evaluation constituted the main information. The answers to the evaluation questions formed together with the information of publications and other scientific activities an entity that was to be reviewed as a whole.

The present evaluation recognizes and justifies the diversity of research practices and publication traditions. Traditional Research Assessment Exercises do not necessarily value high quality research with low volumes or research distinct from mainstream research. It is challenging to expose the diversity of research to fair comparison. To understand the essence of different research practices and to do justice to their diversity was one of the main challenges of the present evaluation method. Understanding the divergent starting points of the RCs demanded sensitivity from the evaluators.

1.2 Aims and objectives in the evaluation

The aims of the evaluation are as follows:

* to improve the level of research and doctoral training at the University of Helsinki and to raise their international profile in accordance with the University’s strategic policies. The improvement of doctoral training should be compared to the University’s policy.\(^2\)
* to enhance the research conducted at the University by taking into account the diversity, originality, multidisciplinary nature, success and field-specificity,
* to recognize the conditions and prerequisites under which excellent, original and high-impact research is carried out,
* to offer the academic community the opportunity to receive topical and versatile international peer feedback,
* to better recognize the University’s research potential.
* to exploit the University’s TUHAT research information system to enable transparency of publishing activities and in the production of reliable, comparable data.

1.3 Evaluation method

The evaluation can be considered as an enhancement-led evaluation. Instead of ranking, the main aim is to provide useful information for the enhancement of research and doctoral training of the participating RCs. The comparison should take into account each field of science and acknowledge their special character.

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\(^1\) The panellists did not read research reports or abstracts but instead, they evaluated answers to the evaluation questions, tables and compilations of publications, other scientific activities, bibliometrics or comparable analyses.

\(^2\) Policies on doctoral degrees and other postgraduate degrees at the University of Helsinki.
The comparison produced information about the present status and factors that have lead to success. Also challenges in the operations and outcomes were recognized.

The evaluation approach has been designed to recognize better the significance and specific nature of researcher communities and research areas in the multidisciplinary top-level university. Furthermore, one of the aims of the evaluation is to bring to light those evaluation aspects that differ from the prevalent ones. Thus the views of various fields of research can be described and research arising from various starting points understood better. The doctoral training is integrated into the evaluation as a natural component related to research. Operational processes of doctoral training are being examined in the evaluation.

**Five stages of the evaluation method were:**
1. Registration – Stage 1
2. Self-evaluation – Stage 2
3. TUHAT\(^3\) compilations on publications and other scientific activities\(^4\)
4. External evaluation
5. Public reporting

### 1.4 Implementation of the external evaluation

**Five Evaluation Panels**

Five evaluation panels consisted of independent, renowned and highly respected experts. The main domains of the panels are:
1. biological, agricultural and veterinary sciences
2. medicine, biomedicine and health sciences
3. natural sciences
4. humanities
5. social sciences

The University invited 10 renowned scientists to act as chairs or vice-chairs of the five panels based on the suggestions of faculties and independent institutes. Besides leading the work of the panel, an additional role of the chairs was to discuss with other panel chairs in order to adopt a broadly similar approach. The panel chairs and vice-chairs had a pre-meeting on 27 May 2011 in Amsterdam.

The panel compositions were nominated by the Rector of the University 27 April 2011. The participating RCs suggested the panel members. The total number of panel members was 50. The reason for a smaller number of panelists as compared to the previous evaluations was the character of the evaluation as a meta-evaluation. The panelists did not read research reports or abstracts but instead, they evaluated answers to the evaluation questions, tables and compilations of publications, other scientific activities, bibliometrics and comparable analyses.

The panel meetings were held in Helsinki:
- On 11–13 September 2011: (1) biological, agricultural and veterinary sciences, (2) medicine, biomedicine and health sciences and (3) natural sciences.
- On 18–20 September 2011: (4) humanities and (5) social sciences.

\(^3\) TUHAT (acronym) of Research Information System (RIS) of the University of Helsinki  
\(^4\) Supervision of thesis, prizes and awards, editorial work and peer reviews, participation in committees, boards and networks and public appearances.
1.5 Evaluation material

The main material in the evaluation was the RCs' self-evaluations that were qualitative in character and allowed the RCs to choose what was important to mention or emphasise and what was left unmentioned.

The present evaluation is exceptional at least in the Finnish context because it is based on both the evaluation documentation (self-evaluation questions, publications and other scientific activities) and the bibliometric reports. All documents were delivered to the panellists for examination.

Traditional bibliometrics can be reasonably done mainly in medicine, biosciences and natural sciences when using the Web of Science database, for example. Bibliometrics, provided by CWTS/The Centre for Science and Technology Studies, University of Leiden, cover only the publications that include WoS identification in the TUHAT-RIS.

Traditional bibliometrics are seldom relevant in humanities and social sciences because the international comparable databases do not store every type of high quality research publications, such as books and monographs and scientific journals in other languages than English. The Helsinki University Library has done analysis to the RCs, if their publications were not well represented in the Web of Science databases (RCs should have at least 50 publications and internal coverage of publications more than 40%) – it meant 58 RCs. The bibliometric material for the evaluation panels was available in June 2011. The RC-specific bibliometric reports are attached at the end of each report.

The panels were provided with the evaluation material and all other necessary background information, such as the basic information about the University of Helsinki and the Finnish higher education system.

Evaluation material
1. Registration documents of the RCs for the background information
2. Self evaluation material – answers to the evaluation questions
3. Publications and other scientific activities based on the TUHAT RIS:
   3.1. statistics of publications
   3.2. list of publications
   3.3. statistics of other scientific activities
   3.4. list of other scientific activities
4. Bibliometrics and comparable analyses:
   4.1. Analyses of publications based on the verification of TUHAT-RIS publications with the Web of Science publications (CWTS/University of Leiden)
   4.2. Publication statistics analysed by the Helsinki University Library - mainly for humanities and social sciences
5. University level survey on doctoral training (August 2011)
6. University level analysis on publications 2005–2010 (August 2011) provided by CWTS/University of Leiden

Background material

University of Helsinki
- Basic information about the University of the Helsinki
- The structure of doctoral training at the University of Helsinki
- Previous evaluations of research at the University of Helsinki – links to the reports: 1998 and 2005

The Finnish Universities/Research Institutes
- Finnish University system
- Evaluation of the Finnish National Innovation System
- The State and Quality of Scientific Research in Finland. Publication of the Academy of Finland 9/09.

The evaluation panels were provided also with other relevant material on request before the meetings in Helsinki.
1.6 Evaluation questions and material

The participating RCs answered the following evaluation questions which are presented according to the evaluation form. In addition, TUHAT RIS was used to provide the additional material as explained. For giving the feedback to the RCs, the panellists received the evaluation feedback form constructed in line with the evaluation questions:

1. Focus and quality of the RC’s research
   - Description of
     - the RC’s research focus.
     - the quality of the RC’s research (incl. key research questions and results)
     - the scientific significance of the RC’s research in the research field(s)
   - Identification of the ways to strengthen the focus and improve the quality of the RC’s research
The additional material: TUHAT compilation of the RC’s publications, analysis of the RC’s publications data (provided by University of Leiden and the Helsinki University Library)
A written feedback from the aspects of: scientific quality, scientific significance, societal impact, innovativeness
   - Strengths
   - Areas of development
   - Other remarks
   - Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

2. Practises and quality of doctoral training
   - Organising of the doctoral training in the RC. Description of the RC’s principles for:
     - recruitment and selection of doctoral candidates
     - supervision of doctoral candidates
     - collaboration with faculties, departments/institutes, and potential graduate schools/doctoral programmes
     - good practises and quality assurance in doctoral training
     - assuring of good career perspectives for the doctoral candidates/fresh doctorates
   - Identification of the RC’s strengths and challenges related to the practises and quality of doctoral training, and the actions planned for their development.
The additional material: TUHAT compilation of the RC’s other scientific activities/supervision of doctoral dissertations
A written feedback from the aspects of: processes and good practices related to leadership and management
   - Strengths
   - Areas of development
   - Other remarks
   - Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

3. The societal impact of research and doctoral training
   - Description on how the RC interacts with and contributes to the society (collaboration with public, private and/or 3rd sector).
   - Identification of the ways to strengthen the societal impact of the RC’s research and doctoral training.
The additional material: TUHAT compilation of the RC’s other scientific activities.
A written feedback from the aspects of: societal impact, national and international collaboration, innovativeness
   - Strengths
   - Areas of development
   - Other remarks
   - Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)
4. International and national (incl. intersectoral) research collaboration and researcher mobility
- Description of
  - the RC’s research collaborations and joint doctoral training activities
  - how the RC has promoted researcher mobility
- Identification of the RC’s strengths and challenges related to research collaboration and researcher mobility, and the actions planned for their development.

A written feedback from the aspects of: scientific quality, national and international collaboration
- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

5. Operational conditions
- Description of the operational conditions in the RC's research environment (e.g. research infrastructure, balance between research and teaching duties).
- Identification of the RC’s strengths and challenges related to operational conditions, and the actions planned for their development.

A written feedback from the aspects of: processes and good practices related to leadership and management
- Strengths
- Areas of development
- Other remarks
- Recommendations

6. Leadership and management in the researcher community
- Description of
  - the execution and processes of leadership in the RC
  - how the management-related responsibilities and roles are distributed in the RC
  - how the leadership- and management-related processes support
    - high quality research
    - collaboration between principal investigators and other researchers in the RC
    - the RC’s research focus
    - strengthening of the RC’s know-how
- Identification of the RC’s strengths and challenges related to leadership and management, and the actions planned for developing the processes

7. External competitive funding of the RC
- The RCs were asked to provide information of such external competitive funding, where:
  - the funding decisions have been made during 1.1.2005-31.12.2010, and
  - the administrator of the funding is/has been the University of Helsinki
- On the e-form the RCs were asked to provide:
  1) The relevant funding source(s) from a given list (Academy of Finland/Research Council, TEKES/The Finnish Funding Agency for Technology and Innovation, EU, ERC, foundations, other national funding organisations, other international funding organisations), and
  2) The total sum of funding which the organisation in question had decided to allocate to the RCs members during 1.1.2005–31.12.2010.

Competitive funding reported in the text is also to be considered when evaluating this point.

A written feedback from the aspects of: scientific quality, scientific significance, societal impact, innovativeness, future significance
- Strengths
- Areas of development
- Other remarks
- Recommendations

8. The RC’s strategic action plan for 2011-2013
- RC’s description of their future perspectives in relation to research and doctoral training.

A written feedback from the aspects of: scientific quality, scientific significance, societal impact, processes and good practices related to leadership and management, national and international collaboration, innovativeness, future significance
- Strengths
- Areas of development
9. Evaluation of the category of the RC in the context of entity of the evaluation material (1-8)

The RC's fitness to the chosen participation category
A written feedback evaluating the RC's fitness to the chosen participation category

- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

10. Short description of how the RC members contributed the compilation of the stage 2 material
Comments on the compilation of evaluation material

11. How the UH’s focus areas are presented in the RC’s research?
Comments if applicable

12. RC-specific main recommendations based on the previous questions 1-11

13. RC-specific conclusions

1.7 Evaluation criteria

The panellists were expected to give evaluative and analytical feedback to each evaluation question according to their aspects in order to describe and justify the quality of the submitted material. In addition, the evaluation feedback was asked to be pointed out the level of the performance according to the following classifications:

- outstanding (5)
- excellent (4)
- very good (3)
- good (2)
- sufficient (1)

Evaluation according to the criteria was to be made with thorough consideration of the entire evaluation material of the RC in question. Finally, in questions 1-4 and 9, the panellists were expected to classify their written feedback into one of the provided levels (the levels included respective descriptions, ‘criteria’). Some panels used decimals in marks. The descriptive level was interpreted according to the integers and not rounding up the decimals by the editors.

Description of criteria levels

Question 1 – FOCUS AND QUALITY OF THE RC’S RESEARCH

Classification: Criteria (level of procedures and results)

Outstanding quality of procedures and results (5)
Outstandingly strong research, also from international perspective. Attracts great international interest with a wide impact, including publications in leading journals and/or monographs published by leading international publishing houses. The research has world leading qualities. The research focus, key research questions scientific significance, societal impact and innovativeness are of outstanding quality.

In cases where the research is of a national character and, in the judgement of the evaluators, should remain so, the concepts of “international attention” or “international impact” etc. in the grading criteria above may be replaced by “international comparability”.

10
Operations and procedures are of outstanding quality, transparent and shared in the community. The improvement of research and other efforts are documented and operations and practices are in alignment with the documentation. The ambition to develop the community together is of outstanding quality.

**Excellent quality of procedures and results (4)**

Research of excellent quality. Typically published with great impact, also internationally. Without doubt, the research has a leading position in its field in Finland.

Operations and procedures are of excellent quality, transparent and shared in the community. The improvement of research and other efforts are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of excellent quality.

**Very good quality of procedures and results (3)**

The research is of such very good quality that it attracts wide national and international attention.

Operations and procedures are of very good quality, transparent and shared in the community. The improvement of research and other efforts are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of very good quality.

**Good quality of procedures and results (2)**

Good research attracting mainly national attention but possessing international potential, extraordinarily high relevance may motivate good research.

Operations and procedures are of good quality, shared occasionally in the community. The improvement of research and other efforts are occasionally documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of good quality.

**Sufficient quality of procedures and results (1)**

In some cases the research is insufficient and reports do not gain wide circulation or do not have national or international attention. Research activities should be revised.

Operations and procedures are of sufficient quality, shared occasionally in the community. The improvement of research and other efforts are occasionally documented and operations and practices are to some extent in alignment with the documentation. The ambition to develop the community together is of sufficient quality.

**Question 2 – DOCTORAL TRAINING**

**Question 3 – SOCIETAL IMPACT**

**Question 4 – COLLABORATION**

**Classification: Criteria (level of procedures and results)**

**Outstanding quality of procedures and results (5)**

Procedures are of outstanding quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are documented and operations and practices are in alignment with the documentation. The ambition to develop the community together is of outstanding quality. The procedures and results are regularly evaluated and the feedback has an effect on the planning.

**Excellent quality of procedures and results (4)**

Procedures are of excellent quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of excellent quality. The procedures and outcomes are evaluated and the feedback has an effect on the planning.

**Very good quality of procedures and results (3)**

Procedures are of very good quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and
management are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of very good quality.

**Good quality of procedures and results (2)**

Procedures are of good quality, shared occasionally in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of very good quality.

**Sufficient quality of procedures and results (1)**

Procedures are of sufficient quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are occasionally documented and operations and practices are to some extent in alignment with the documentation. The ambition to develop the community together is of sufficient quality.

**Question 9 – CATEGORY**

Participation category – fitness for the category chosen

The choice and justification for the chosen category below should be reflected in the RC’s responses to the evaluation questions 1–8.

1. The research of the participating community represents the international cutting edge in its field.
2. The research of the participating community is of high quality, but the community in its present composition has yet to achieve strong international recognition or a clear break-through.
3. The research of the participating community is distinct from mainstream research, and the special features of the research tradition in the field must be considered in the evaluation. The research is of high quality and has great significance and impact in its field. However, the generally used research evaluation methods do not necessarily shed sufficient light on the merits of the research.
4. The research of the participating community represents an innovative opening. A new opening can be an innovative combination of research fields, or it can be proven to have a special social, national or international demand or other significance. Even if the researcher community in its present composition has yet to obtain proof of international success, its members can produce convincing evidence of the high level of their previous research.
5. The research of the participating community has a highly significant societal impact. The participating researcher community is able to justify the high social significance of its research. The research may relate to national legislation, media visibility or participation in social debate, or other activities promoting social development and human welfare. In addition to having societal impact, the research must be of a high standard.

**An example of outstanding fitness for category choice (5)**

The RC’s representation and argumentation for the chosen category were convincing. The RC recognized its real capacity and apparent outcomes in a wider context to the research communities. The specific character of the RC was well-recognized and well stated in the responses. The RC fitted optimally for the category.

- Outstanding (5)
- Excellent (4)
- Very good (3)
- Good (2)
- Sufficient (1)

The above-mentioned definition of outstanding was only an example in order to assist the panellists in the positioning of the classification. There was no exact definition for the category fitness.

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5 The panels discussed the category fitness and made the final conclusions of the interpretation of it.
1.8 Timetable of the evaluation

The main timetable of the evaluation:

1. Registration November 2010
3. External peer review May–September 2011
4. Published reports March–April 2012
   - University level public report
   - RC specific reports

The entire evaluation was implemented during the university’s strategy period 2010–2012. The preliminary results were available for the planning of the following strategy period in late autumn 2011. The evaluation reports will be published in March/April 2012. More detailed time schedule is published in the University report.

1.9 Evaluation feedback – consensus of the entire panel

The panellists evaluated all the RC-specific material before the meetings in Helsinki and mailed the draft reports to the evaluation office. The latest interim versions were on-line available to all the panellists on the Wiki-sites. In September 2011, in Helsinki the panels discussed the material, revised the first draft reports and decided the final numeric evaluation. After the meetings in Helsinki, the panels continued working and finalised the reports before the end of November 2011. The final RC-specific reports are the consensus of the entire panel.

The evaluation reports were written by the panels independently. During the editing process, the evaluation office requested some clarifications from the panels when necessary. The tone and style in the reports were not harmonized in the editing process. All the reports follow the original texts written by the panels as far as it was possible.

The original evaluation material of the RCs, provided for the panellists is attached at the end of the report. It is essential to notice that the exported lists of publications and other scientific activities depend how the data was stored in the TUHAT-RIS by the RCs.
2 Evaluation feedback

2.1 Focus and quality of the RC’s research

- Description of
  - the RC’s research focus
  - the quality of the RC’s research (incl. key research questions and results)
  - the scientific significance of the RC’s research in the research field(s)
- Identification of the ways to strengthen the focus and improve the quality of the RC’s research

ASPECTS: Scientific quality, scientific significance, societal impact, innovativeness

The group looks to be quite cohesive. There is clearly sharing of resources in the form of student supervision and infrastructure as well as seminars. Merilä is clearly an outstanding researcher by any international standard and contributes massively to the group. Merilä was elected to the Finnish Academy of Science and Letters in 2005. O’Hara brings some very strong skills to the group around Bayesian analyses, and the rest of the group including Kuparinen and postdoctoral researchers provide strong support.

The group has an excellent publication record. The Ecology papers are rated as having a high impact and this is the main output area of the group. Much of the research is clearly at the cutting edge internationally given the impact of publications from the group, standing of group members based on invitations and reviews, and applications of research results to a wide variety of areas including management and conservation.

The publication list indicates a very high level of productivity for the group, with important papers in the top ecological and evolutionary journals including the American Naturalist, JEB, Ecology, BMC Evol Biol, Molecular Ecology, J of Animal Ecology, and Evolution as well as more general journals such as PlosOne, PRS, PNAS, Science, Genetics, Ecological Applications and GCB. Given the small size of the group, the number of publications is clearly at the high end.

Merilä and O’Hara have been involved in several important reviews with colleagues such as the influential Gienapp et al in Molecular Ecology.

The group is clearly performing at a high level and the challenge is to maintain this level. The role and strength of Kuparinen in the group were not entirely clear to the panel. Is this researcher heading to an independent career?

From the material it is not easy to conclude what is the contribution of EGRU in the present Centre of Excellence consisting of three groups. Two other groups are located in the University of Turku.

Numeric evaluation: 5 (Outstanding)

2.2 Practises and quality of doctoral training

- Organising of the doctoral training in the RC. Description of the RC’s principles for:
  - recruitment and selection of doctoral candidates
  - supervision of doctoral candidates
  - collaboration with faculties, departments/institutes, and potential graduate schools/doctoral programmes
  - good practises and quality assurance in doctoral training
  - assuring of good career perspectives for the doctoral candidates/fresh doctorates
- Identification of the RC’s strengths and challenges related to the practises and quality of doctoral training, and the actions planned for their development.
- Additional material: TUHAT compilation of the RC’s other scientific activities/supervision of doctoral dissertations
ASPECTS: Processes and good practices related to leadership and management

The training described for the students looks to be excellent. We note participation in seminars, interactions with supervisory staff, and general support.

Herczeg and Merilä have both been quite heavily involved in PhD supervision, the other members less so. Is there a reason for this skewing? The use of postdocs as official 2nd supervisors is excellent and hereby postdocs could use this in their CV and future career.

The number of graduate students (12 graduating since 2001) is modest. It would be interesting to see how many of the students now hold positions outside the EU. Do students have opportunities to spend time abroad as part of their training? Some mention was made of attending specialist courses, but what about these opportunities more generally? What is the success rate of students in gaining small grants? The level of detail available about the students is impressive.

Numeric evaluation: 4.5 (Excellent)

2.3 The societal impact of research and doctoral training

- Description on how the RC interacts with and contributes to the society (collaboration with public, private and/or 3rd sector).
- Identification of the ways to strengthen the societal impact of the RC’s research and doctoral training.
- Additional material: TUHAT compilation of the RC’s other scientific activities.

ASPECTS: Societal impact, national and international collaboration, innovativeness

Merilä has produced a large number of articles for the popular press, which reflects a very commendable level of outreach. O’Hara, Merilä and others have clearly been actively involved in scientific debates in the literature. It is interesting to see the use of a blog as a scientific forum as part of the EGRU’s activity.

Merilä as leader of the group has a high level of media engagement and has also made contributions to external committees. Other members of the group have also engaged in media interactions. This seems like an appropriate and commendable level of engagement.

Merilä has been a member and Chair of several Finnish scientific initiatives and European networks. Several members of the group have been involved in grant evaluations particularly for the ESF. Merilä has acted as advisor in position appointments. There is a wide range of reviewing duties, including in top journals in the area like Science, Molecular Ecology, Evolution and so on. O’Hara, Merilä, and Arias have participated in senior editorial roles (though it was not entirely clear what the role of Arias was in the listed journals).

We agree with the suggestion in the proposal that more junior members of the group be encouraged to participate in societal extension. Student involvement in the public arena is certainly less than one would see in other institutions.

Overall the involvement of this RC in public media has not been particularly active compared to some other groups. Many of the listed articles are in magazines with quite a restricted audience.

Numeric evaluation: 4.5 (Excellent)

2.4 International and national (incl. intersectoral) research collaboration and researcher mobility

- Description of
  - the RC’s research collaborations and joint doctoral training activities
  - how the RC has promoted researcher mobility
- Identification of the RC’s strengths and challenges related to research collaboration and researcher mobility, and the actions planned for their development.

ASPECTS: Scientific quality, national and international collaboration
The group has had an international outlook, with joint publications involving a number of authors outside of Finland (though mostly in Europe). The Nordic and European Science Foundation (ESF) networks have clearly provided connections with the broader academic community. The group also has a commendable local focus through local fisheries management and biodiversity strategy development.

It would have been interesting to find out more about how the group interacts at the policy level both in Finland and the EU. Are there other opportunities for the group to be involved in wider debates around climate change issues, including policy development?

Are there enough international opportunities available to students and how are they encouraged for visits abroad? However, the local/international student and researcher mix looks appropriate.

Some comparison with other equivalent groups would have been useful. For instance, 53% of the group consists of Finnish nationals – how does this compare to other similar institutions? What should the target be? Why?

**Numeric evaluation: 4 (Excellent)**

### 2.5 Operational conditions

- **Description of the operational conditions in the RC’s research environment (e.g. research infrastructure, balance between research and teaching duties).**

- **Identification of the RC’s strengths and challenges related to operational conditions, and the actions planned for their development.**

**ASPECTS: Processes and good practices related to leadership and management**

The group seems to have good access to laboratory and field facilities. There are strong interactions with other institutions that have specialist facilities, such as in the physiology area. Much of the genomics seems to be done locally.

How is funding for core support positions provided? There are two core technicians, presumably funded by the university? Is the administrative assistant, an essential position with a unit of this size, funded by soft money? It sounds like the Centre of Excellence application might be an important aspect of the future success of the group.

There is certainly the need for the group to increase its expertise in the bioinformatics area. Clearly in ecological research we are entering an age where molecular data available to tackle ecological questions is exploding, and to take advantage of this an increasingly different set of skills is required.

The Centre of Excellence application by this group was not successful. What are the consequences?

### 2.6 Leadership and management in the researcher community

- **Description of**
  - the execution and processes of leadership in the RC
  - how the management-related responsibilities and roles are distributed in the RC
  - how the leadership- and management-related processes support
    - high quality research
    - collaboration between principal investigators and other researchers in the RC
    - the RC’s research focus
    - strengthening of the RC’s know-how
  - Identification of the RC’s strengths and challenges related to leadership and management, and the actions planned for developing the processes

**ASPECTS: Processes and good practices related to leadership and management**

Merilä seems to provide very strong leadership of the group and keeps the group focused. Information is provided on how grant applications and other decisions are made, and these seem to involve substantial
interactions, although there is no management committee within the group and no formalization of decision making. There is a statement about PIs having the freedom to develop their own projects but no clear indication of whether this has been successful – what fraction of the funding derives from independent initiatives? Also what is the status and policy around publications for lab leaders? The current management model seems to load the responsibilities of the group heavily onto Merilä. Could more shared responsibility models be explored?

2.7 External competitive funding of the RC

- The RCs were asked to provide information of such external competitive funding, where:
  - the funding decisions have been made during 1.1.2005–31.12.2010, and
  - the administrator of the funding is/has been the University of Helsinki
- On the e-form the RCs were asked to provide:
  1) The relevant funding source(s) from a given list (Academy of Finland/Research Council, TEKES/The Finnish Funding Agency for Technology and Innovation, EU, ERC, foundations, other national funding organisations, other international funding organizations), and
  2) The total sum of funding which the organisation in question had decided to allocate to the RCs members during 1.1.2005–31.12.2010.

Competitive funding reported in the text is also to be considered when evaluating this point.

**ASPECTS:** Scientific quality, scientific significance, societal impact, innovativeness and future significance

The group has a strong record of funding in projects spanning a number of different organisms and the group has a good record of keeping up with the latest developments and contributing in a positive way to them - such as the recent genome scan contributions. The income average is 1.65 MEUR per year which is substantial and a credit to the group, particularly given the consistent funding achieved over a number of years. Some values seem to be missing from the funding list provided, such as the funding through ESF. Moreover, it might be worthwhile setting a funding target for the group over the next 5 years; can the group achieve its objectives with the funding provided, particularly given the shift from population to genomics-based research where costs can escalate quite rapidly? A target might be aspirational, but can nevertheless be useful in planning and ensuring the long term viability of the group. Also are there funding schemes not listed to which applications could be submitted?

We believe that the funding could be more spread and generally higher given the large number of papers and group size. Approximately 6.6 MEUR spread over 6 years is approximately 1.1 MEUR per year which is actually on the lower side given the group size of 30 persons. The contribution from EU is also quite low especially considering the emphasis of internationalization. We would be interested to know the total budget from the University to better appreciate how important the Centre of Excellence funding is for the group. Less funding from the University may set back the group significantly. The EU funding is low. The RC did not get any funding from ESF.

2.8 The RC’s strategic action plan for 2011–2013

- RC’s description of their future perspectives in relation to research and doctoral training.

**ASPECTS:** Scientific quality, scientific significance, societal impact, processes and good practices related to leadership and management, national and international collaboration, innovativeness, future significance

The action plan seems to be mostly about maintaining the status quo, except for a shift from bird work to fish work for sensible reasons. We agree entirely about the need to incorporate modern genomic approaches into the currently used experimental and quantitative genetic methods, given the rapid expansion of tools available. Some indication of the types of genomic tools to be used into the future would have been useful. What about integration with other – omics approaches? Does the group intend to develop expertise in network analyses, given that these are becoming more important in the areas central
to the group? The proposed funding applications are all locally focused; there should be potential to apply for EU and international schemes?

We were curious about the new MSc level course in ecological and evolutionary genetics. This seems like a good use of skills available in the group, but what is the evidence for demand?

2.9 Evaluation of the category of the RC in the context of entity of the evaluation material (1-8)

The RC’s fitness to the chosen participation category.

Category 1. The research of the participating community represents the international cutting edge in its field.

The RC is participating under category 1 ‘The research of the participating community represents the international cutting edge in its field’ and this seems appropriate. As outlined above, the RC is certainly at the international cutting edge in its field, and has been in this position for some time. The challenge is to maintain this position in an area that is rapidly changing through –omics technologies and an enormous increase in the amount of data that is being generated, moving researchers away from experimental settings to much more computer based work. The move to fish research seems like a sensible step given tools and techniques available, as long as the group is capable of completing functional genetic analyses and making connections to the international community. Overall we are impressed by the performance of the group but have some suggestions about management and integrating activities across the different research activities.

Numeric evaluation: 5 (Outstanding)

2.10 Short description of how the RC members contributed the compilation of the stage 2 material

All PIs contributed to the assembly of stage 2 material and is the commendable that the PIs let the PhD students comment on the text.

2.11 How the UH’s focus areas are presented in the RC’s research

Focus area 2: The basic structure of life

This group fits in with the environmental change area of focus and is specifically mentioned in the UH document.

2.12 RC-specific main recommendations

The group is likely to continue to perform well even though we understand that their recent Centre of Excellence application was not successful. We recommend that the group would expand the bioinformatics capability but this seems to be a university-wide issue and we have made some general recommendations around this. The group might explore different management models where the burden is shared further among group leaders. Ways of making the funding base more diverse could be explored.
2.13 RC-specific conclusions

This is a high quality RC that should continue to perform well into the future.

2.14 Preliminary findings in the Panel-specific feedback

This is an outstanding RC with a strong track record and a clear vision about future directions. The group has performed well for a number of years and also engaged the wider community successfully. External funding is generally high and the RC tracks its postgraduate outcomes carefully. There is an interesting proposal for an MSc course that requires further development. Merilä provides strong leadership although he seems to carry the burden of management and other models might be explored. The group might also consider ways of expanding their funding base.

2.15 Preliminary findings in the University-level evaluation

The group would benefit from additional bioinformatics support and the establishment of a support centre to service multiple groups is worth exploring at the UH level.
3 Appendices

A. Original evaluation material
   a. Registration material – Stage 1
   b. Answers to evaluation questions – Stage 2
   c. List of publications
   d. List of other scientific activities

B. Bibliometric analyses
   a. Analysis provided by CWTS/University of Leiden
   b. Analysis provided by Helsinki University Library (66 RCs)
International evaluation of research and doctoral training at the University of Helsinki 2005-2010

RC-SPECIFIC MATERIAL FOR THE PEER REVIEW

NAME OF THE RESEARCHER COMMUNITY:
Ecological Genetics Research Unit (EGRU)

LEADER OF THE RESEARCHER COMMUNITY:
Professor Juha Merilä, Department of Biosciences, Faculty of Biological and Environmental Sciences

RC-SPECIFIC MATERIAL FOR THE PEER REVIEW:

- Material submitted by the RC at stages 1 and 2 of the evaluation
  - STAGE 1 material: RC’s registration form (incl. list of RC participants in an excel table)
  - STAGE 2 material: RC’s answers to evaluation questions

- TUHAT compilations of the RC members’ other scientific activities 1.1.2005-31.12.2010
  (analysis carried out by CWTS, Leiden University)

NB! Since Web of Science(WoS)-based bibliometrics does not provide representative results for most RCs representing humanities, social sciences and computer sciences, the publications of these RCs will be analyzed by the UH Library (results available by the end of June, 2011)
1 RESPONSIBLE PERSON

Name: Merilä, Juha  
E-mail: juha.merila@helsinki.fi  
Phone: +358-40-8374165  
Affiliation: University of Helsinki, Department of Biosciences  
Street address: Viikinkaari 1

2 DESCRIPTION OF THE PARTICIPATING RESEARCHER COMMUNITY (RC)

Name of the participating RC (max. 30 characters): Ecological Genetics Research Unit  
Acronym for the participating RC (max. 10 characters): EGRU  
Description of the operational basis in 2005-2010 (eg. research collaboration, joint doctoral training activities) on which the RC was formed (MAX. 2200 characters with spaces): The basis for forming this research community is that it is an existing research community which has been operational since 2001. EGRU consist of a group of people who work in highly collaborative or interrelated projects. Within the 27 researchers in EGRU a great number of collaborations can be found both along a specific question (i.e. addressing a particular topic in replicated model systems) or a unique model system (i.e. studying different questions on the same system), or when expertise of different people is combined to target complex questions. From training perspective, this collaborative work strategy allows providing highly multidisciplinary training to doctoral candidates and postdocs. This is accomplished by shared supervision of candidates by mentors with contrasting expertise. EGRU members also share infrastructure (e.g. assisting personnel, laboratory technicians and space, 4 wet-lab rooms for fish rearing, and equipment) and meet in regular weekly seminars. EGRU is in its’ entity part of existing Centre of Excellence (2006-2011) in Evolutionary Genetics and Physiology funded by Academy of Finland. More information about the research community and its activities can be found from EGRU web pages (http://www.helsinki.fi/biosci/egru/)

3 SCIENTIFIC FIELDS OF THE RC

Main scientific field of the RC’s research: biological, agricultural and veterinary sciences

RC’s scientific subfield 1: Evolutionary Biology  
RC’s scientific subfield 2: Genetics and Heredity  
RC’s scientific subfield 3: Ecology  
RC’s scientific subfield 4: Zoology  
Other, if not in the list: Biodiversity Conservation, Fisheries, Marine and Freshwater Biology, Biology, Mathematical and Computational Biology
RC'S PARTICIPATION CATEGORY

Participation category: 1. Research of the participating community represents the international cutting edge in its field

Justification for the selected participation category (MAX. 2200 characters with spaces): We propose participation in category # 1 (The research of the participating community represents the international cutting edge in its field). Justification for this comes from the fact that our research – as can be judged from the quality and quantity of our research output (cf. peer-reviewed publications) at the cutting edge of evolutionary biology and evolutionary genetics. Likewise, our research has been generously funded (e.g. national Centre of Excellence, Academy professorship, numerous Academy of Finland research projects and postdoctoral grants, EU funding, etc) since 2001. This stable and high-level of funding would not be possible unless our research were considered to be of international cutting edge standards. We have numerous international collaborations with leading scientists in our field, and we are frequently asked to participate in meetings, evaluations and community service functions at international level. We have served as referees, associated editors, editorial board members and editor-of-chiefs in number of leading journals of our field.

DESCRIPTION OF THE RC'S RESEARCH AND DOCTORAL TRAINING

Public description of the RC’s research and doctoral training (MAX. 2200 characters with spaces):
Research in the Ecological Genetic Research Unit focuses on studies of evolutionary and genetic processes in wild animal populations using genetic, modeling and experimental approaches. We are particularly interested in the process of adaptation to local environmental conditions and environmental changes, including climate change. Apart from studying interactions between natural selection, environmental conditions, and the inheritance of ecologically important traits, our research also focuses on the study of genetic diversity and its dynamics, maintenance and structuring in the wild. Our research on conservation genetics includes studies relating to inbreeding problems, but also studies of cryptic genetic differentiation among populations and species. Comparative studies of genetic differentiation in neutral marker genes and quantitative traits – allowing inference to be made about relative importance of natural selection and random genetic drift in evolution - is a particular stronghold of our research. We have actively driven empirical, methodological and conceptual development in this field of broad interest among evolutionary biologists. Likewise, our studies and reviews on fisheries- and climate-induced evolution have made notable international impact. The same can be said about our studies on the genetic architecture of different types of traits in wild populations, as well as how this architecture is influenced by environmental stress. Apart from the fundamental scientific importance of our research, an important goal in many of our projects is to devise tools, scientific knowledge, and advice for the conservation of biodiversity (e.g. identification of cryptic species in Western Ghats Biodiversity hotspot) and the management of commercially important fish stocks (e.g. herring in the Baltic Sea).

EGRU currently consists of 30 researchers (1 Academy professor, 4 principal investigators, 7 postdocs, 9 PhD-students, 6 MSc-students, 2 technicians, and 1 assistant), 16 of which are foreigners (8 EU and 8 other nationalities). During 2001-2010, EGRU has schooled 12 PhD students to graduation.
Significance of the RC’s research and doctoral training for the University of Helsinki (MAX. 2200 characters with spaces): We are an active, nationally and internationally recognized unit conducting high profile research in evolutionary biology and evolutionary genetics. We contribute to the internationalization of Helsinki University by attracting students and researchers from abroad: during 2001-2010, there have been about 70 researchers associated with our unit, 26 of which have been from abroad, representing 16 nationalities. Although the majority of our research is basic science focusing on general issues beyond taxonomic (cf. plant vs animal) or habitat (cf. terrestrial vs aquatic) specific demarcations, much of our research also has applied relevance. For instance, in the context of biodiversity conservation (e.g. characterization & conservation biodiversity in the Western Ghats Biodiversity hotspot), fisheries policies (e.g. our research on fisheries induced selection), habitat management (e.g. genetic and population level consequences of land use patterns and habitat fragmentation), and climate change adaptation (e.g. studies on evolutionary responses to climate change). Given these links to a broad range of issues of contemporary interest among public and society, our research and doctoral training should be of significance to UH. Since 2001, we have trained 12 doctoral students to completion. The fact that all of these students have found their places in either in research community or society testifies that our doctoral training strategy has been successful.

Finally, as our group works with wild vertebrates (birds, amphibians, reptiles and fish – to some extent also with mammals) as models, we are regularly contacted by the general public and press (but also from our ministries etc.), with various questions relating to the biology of the organisms that we work with. The value of this “public service” in informing people directly should not be undervalued while thinking about the university’s role in informing and interacting with society.

Keywords: amphibians, adaptation, birds, evolution, ecological genetics, evolutionary ecology, fish, fisheries, population genetics, genomics, quantitative genetics

Justified estimate of the quality of the RC’s research and doctoral training at national and international level during 2005-2010 (MAX. 2200 characters with spaces): We believe that our research is of very high national and international quality. We publish regularly in the best journals (e.g. Nature, Science, Proc Natl Acad Sci USA, Proc R Soc Lond B, Evolution, Mol Biol Evol) of our field(s), and our work is highly cited by peers as can be seen from the data contained in ISI Web Science. We have also made several important conceptual contributions to current debates in our field(s), and we regularly publish reviews, meta-analyses and perspectives in top-tier journals (e.g. Trends in Ecology & Evolution, Science). Since we consider our research to be of very high international quality, it automatically means that this applies also to the national level. This interpretation is further justified by our Centre of Excellence status plus the Academy of Finland Research positions we have had during past five years (1 Academy professor, 1 Academy researcher, 5 personal post-doctoral positions). The high quality of doctoral training is made apparent by the fact that all of our students have been members of national graduate schools (GS in Population Genetics, GS in Biological Interactions, GS in Evolutionary Ecology, GS in LUOVA (Finnish School in Wildlife Biology, Conservation and Management) which has ensured that the students get support and training in other aspects of scientific career development as opposed to only the subject matters of their PhD-thesis.
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 1 MATERIAL (registration form)

Since 2001, we have graduated 12 PhD students who have all presented well evaluated theses. The average PhD student in EGRU defends thesis based on 5-7 chapters (= peer-reviewed scientific papers), and most probably will be engaged in research also outside of his/her thesis. Students are also encouraged to present their results in international conferences / workshops. However, publishing is not the only strong point of our PhD students. We assure that they can participate in the best available courses worldwide to learn from the absolute best people in the given topic; hence, after their degrees are earned, they are very competitive both in their scientific record and methodological / general knowledge.

Comments on how the RC’s scientific productivity and doctoral training should be evaluated (MAX. 2200 characters with spaces): As for methods to assess our scientific productivity, we suggest a close look on the quantity and quality of our published and peer-reviewed scientific articles and reviews. Basic bibliometric analyses will go a long way to pointing out where we stand. The quality of the doctoral training can be assessed by examining the content of the actual doctoral theses produced (including number and quality of individual chapters [=publications]), as well as tracking the subsequent career paths of the graduated doctoral students.

As to our publishing strategy, we aim to publish high quality scientific articles in the best journals of our respective fields. While the primary emphasis is on producing interesting papers appealing to broad audience, we do see synthetic reviews and meta-analyses as an important part of our activity. We do endorse a policy according to which a PhD-thesis should represent a substantial and significant body of research as opposed to current tendency to reductionist approach to defend theses with 3-4 chapters. After all, learning to write and communicate ones research is an essential skill which cannot be learned without practice (cf. repetition). We are also active in promoting and translating our research and knowledge to general public: this can be seen from numerous popular scientific articles we have written (e.g. to our largest news paper Helsingin Sanomat) or which have been written by journalists who have become interested about our research, and through our publically available blog which has very high international readership.
### LIST OF RC MEMBERS

**NAME OF THE RESEARCHER COMMUNITY:** Ecological Genetics Research Unit (EGRU)

**RC-LEADER:** J. Merilä

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<th>CATEGORY</th>
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<tr>
<td>Last name</td>
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<tr>
<td>Merilä</td>
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INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 2 MATERIAL

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<tr>
<td>Name of the RC's responsible person: Merilä, Juha</td>
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<td>E-mail of the RC's responsible person: <a href="mailto:juha.merila@helsinki.fi">juha.merila@helsinki.fi</a></td>
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<td>Name and acronym of the participating RC: Ecological Genetics Research Unit, EGRU</td>
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<td>The RC’s research represents the following key focus area of UH: 2. Elämän perusrakenne – The basic structure of life</td>
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<td>Comments for selecting/not selecting the key focus area: This the key focus are UH has allocated us by listing our Centre of Excellence under this theme in various contexts.</td>
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### 1 Focus and Quality of RC’s Research (Max. 8800 characters with spaces)

- Description of the RC’s research focus, the quality of the RC’s research (incl. key research questions and results) and the scientific significance of the RC’s research for the research field(s).

The research focus of the Ecological Genetics Research Unit (EGRU) is in ecological and evolutionary genetics of wild vertebrate populations. In our work we aim to tackle general and conceptually important problems in evolutionary biology and genetics utilizing methods and approaches of quantitative and population genetics, as well as those of functional genomics and statistics. While our research is very much focused on fundamental scientific questions, applied research in the realms of fisheries sciences, climate change and conservation genetics have always been important bylines.

The model organisms in our research are vertebrates, mainly birds, amphibians and fishes. Bird models have been integral in approaches where long-term data has been needed to make inferences about changes in mean trait values over time, and in quantitative genetic studies where multigenerational pedigrees and/or estimates of individual fitness (i.e. lifetime reproductive success) have been needed. Amphibian models have been useful in studies requiring large factorial experiments with control over environmental variability and variation in individual relatedness. Amphibians have also been of interest because of the need to understand the factors behind their global declines — an important and diverse research area into which we have made many contributions. During the past years, the focus of our research has shifted towards fish models, and in particular, to three- and ninespine sticklebacks. The motivation for this has been twofold: better access to genomic resources of these species, as compared to amphibians, and the relative ease in which fish can be reared in factorial experiments. In addition, the use of fish models has closed the gap between our empirical genetic research and our research interests in the realm of fisheries sciences.

Having outlined the use and motives behind the model systems in our research, we wish to underline the fact that our research strives to be "taxon-free": the primary focus is in broad conceptual questions, rather than on taxon-specific problems. This can be seen also from the facts that (i) we publish primarily in general evolutionary biology and genetics journals rather than in more narrowly focused taxon-specific journals and (ii) that we publish many general reviews, perspectives and meta-analyses. Hence, we see ourselves more as evolutionary biologists rather than specialists in avian, amphibian or aquatic biology.

As to the quality of EGRU’s work, it is our perception that our research meets criteria to be considered among the top levels of international science in our field. We support this view with the fact that
international peer-review of our funding applications, both personal and project-based, consistently rank among the highest evaluation scores. Indeed, the amount of external funding is telling in this regard: during 2005-2010 our external funding amounted to an average 1.65 million € per year (i.e. a total of ca. 8.25 million €, of which only 7.75 million € appears as administrated by University of Helsinki). It is unlikely that low or average quality research would attract these amounts of funding. In addition, we consistently publish in the best journals of our research fields. During the past five years our work has appeared frequently in major journals of evolutionary biology (58 papers total [2005-2010] e.g.: J Evol Biol = 10, Evolution = 4, Proc R Soc Lond = 6; BMC Evol Biol = 3, Am Nat = 2), genetics (Mol Ecol = 15, Heredity = 3, Genetics = 2, Mol Biol & Evol = 3; BMC Genomics = 3) and biology (Nature = 4, Science = 2, PNAS = 1). Furthermore, our research has been highly cited by peers, as can been seen from any bibliographic search one wishes to make.

The scientific significance of EGRU's research for the research field(s) will be ultimately judged by history. However, it is perhaps fair to say that we have been more often leaders - and even trendsetters - than followers. For instance, we were among the first to introduce both "animal model" analyses (e.g. Merilä et al. 2001. Nature 412:76; Teplitsky et al. 2008. PNAS 105:13492) and Bayesian approaches (e.g. Pakkasmaa et al. 2003. Heredity 91:117; O'Hara et al 2008. J Evol Biol 21: 949) to evolutionary genetics research, as well first to recognize the "problem of stasis" in contemporary time-series where selection response was expected (e.g. Merilä et al. 2001. Genetica 112-113:199; Gienapp et al. 2008. Mol Ecol 17:167). Likewise, we were early to recognize the limits of neutral marker gene inference in population genetics and evolutionary biology, and advocated the importance of looking into functional genetic variability (e.g. Merilä & Crnokrak 2001. J Evol Biol 14:892; Leinonen et al. 2008. J Evol Biol 21:1). In particular, our work in developing conceptual issues and estimation methods (e.g. O'Hara & Merilä 2005. Genetics 171:1331) for comparative studies of quantitative trait and molecular marker comparisons to detect footprints of directional natural selection have been widely recognized. This work is still in progress, and has more recently been complemented with genome scan approaches (e.g. Mäkinen et al. 2008, Mol Ecol 17:3565; Shikano et al 2010. Mol Biol Evol 27:2775; Shimada et al. 2011, Mol Biol Evol 28:181; DeFaveri et al. 2011. Evolution, in press), which have been received as important contributions to the field (e.g. Beaumont 2008. Mol Ecol 17:3425). These contributions to studies of population differentiation link intimately with our work on climate change and fisheries induced evolution. In these realms, we can claim wide recognition as critical voices stressing the importance of genetic evidence in any evolutionary inference (e.g. Kuparinen & Merilä 2007. Trends Ecol Evol 22:652; Kuparinen & Merilä 2008. Science 320:47; Gienapp et al 2008. Mol Ecol 17:167). Our studies in population and conservation genetics have been characterized by high-level technical rigor and statistical power, with studies employing a higher than average number of populations, individuals and markers. It is perhaps fair to say that there are few groups in the world who have developed as large a number of microsatellite markers as our group has (see primer notes in our publication list). We also believe that our recent work – including remarkable cases of convergent and parallel evolution in giant phenotypes of ninespine sticklebacks (e.g. Herczeg et al. 2009. Evolution 63:3190), as well as studies of genetic architecture in wild bird populations (e.g. Jaari et al. 2009. BMC Genomics 10:1; Li & Merilä 2010. BMC Evol Biol 10:66) – includes many significant papers which bear potential to become widely recognized.

As to the societal impact of our research, see evaluation point #3.

Ways to strengthen the focus and improve the quality of the RC’s research.

While we believe that there is no need for any drastic shifts in the primary focus of our research as the conceptual problems of our interest are still highly relevant, it is crucial to remain aware of methodological developments to ensure that our competence in new approaches remains high. To this...
end, the quality of our research can be improved by increasing competence of model-based approaches to population genomic problems, as well as in NGS-based technologies. We are already progressing towards this by hiring people with specific knowledge. Yet, we anticipate that 1-2 persons with bioinformatics and/or statistical genetics background would be critical to increase the quality of our research. Further, high quality research does not hatch and grow in isolation. We are constantly reviewing and revitalizing our horizons by attending meetings and following the literature. We also anticipate that the size of EGRU is now close to optimal: sufficiently large enough to capture the benefits of moderately large unit, but small enough to be perceptive, flexible and interactive as a team.

**2 Practises and Quality of Doctoral Training (max. 8800 characters with spaces)**

- How is doctoral training organised in the RC? Description of the RC’s principles for recruitment and selection of doctoral candidates, supervision of doctoral candidates, collaboration with faculties, departments/institutes, and potential graduate schools/doctoral programmes, good practises and quality assurance in doctoral training, and assuring good career perspectives for the doctoral candidates/fresh doctorates.

The majority (8 of 16 during 2005-2010) of our doctoral students are recruited from MSc projects or research assistantships within the group. This allows us to be sure that they are well suited for a particular project, and academically competent. The next most common mode of recruitment is through PhD projects being advertised by members of the group when they have funding available (4/16). Advertisements are distributed worldwide, via resources such as the evoldir mailing list in order to reach the widest possible audience. In the case of advertised projects, selection is performed on the basis of the candidates’ previous experience, references, and interview, with the main focus on identifying candidates with the enthusiasm and the ability to learn to become independent researchers. Some potential students approach members of the group either with their own funding for a project, or with funding but no project (4/16). In the latter case, if a suitable supervisor can be found, then the project idea is developed in collaboration with the potential student. In order for a student to benefit from the doctoral training process, a good match must be made between the student, supervisors, and the project itself. We use our experience to try to ensure that these aspects are well matched, but we also allow for flexibility so that the project can be adapted, and additional supervisors can join the project if necessary.

During 1999-2010, EGRU has schooled 16 MSc (10 within the time frame of the RAE assessment period 2005-2010) and 13 PhD students to graduation (7 between 2005-2010). There are currently 9 PhD students, and 6 MSc students.

The majority of doctoral students who work within EGRU are supervised by the head of the group, Prof Juha Merilä, and by a postdoc (6/9), one student is supervised by two postdocs, and two students are supervised only by Prof. Merilä. In addition, there are currently six doctoral students supervised by EGRU members together with 2nd supervisors from different institutions (1 in Finland, 5 abroad). Dual supervision allows for a wider range of opinions and contrasting expertise, and also acts as a safeguard should one supervisor become unable to complete the PhD period. In addition, this provides valuable experience for the PD supervisors. Junior PDs are also encouraged to contribute to supervision, albeit on a non-formal level, to gain some experience prior to taking on a student of their own. Students are assigned an academic committee in addition to the supervisors, usually consisting of two researchers with backgrounds that complement the project. The student, supervisors, and committee members meet once each year to discuss the progress of the project and the students training.
Doctoral studies within EGRU are highly collaborative in nature, and students may have formal collaborations within or outside the group in addition to their formal supervisors. This of course provides additional expertise as well as experience with developing academic working relationships, and in general prepares students better for working in research as compared to many doctoral programs where the student primarily works alone.

The high quality of doctoral training is made apparent by the fact that all of our students have been members of national graduate schools (GS in Population Genetics, GS in Biological Interactions, GS in Evolutionary Ecology, GS in Wildlife Biology, Conservation and Management) which has ensured that the students get support and training in other aspects of scientific career development as opposed to only the subject matters of their thesis. Courses are regularly available through these graduate schools, in general subjects such as ‘Scientist’s survival skills’, and specific research-related skills such as ‘Introduction into programming with Python and Biopython’ (examples of upcoming courses), and in addition, many of our PDs contribute to teaching on such courses. Another important role of the graduate schools is to mediate between student and supervisor if things go wrong, thus, potentially providing a very useful form of additional support both for the students and supervisors.

The University also operates a credit system for training, where doctoral students must obtain 60 credits during their course in order to graduate. Credits are obtained through mandatory components, including a book exam (12 credits), presenting two seminars and attending at least 13 licenciate seminars (4 credits), and an introductory essay (8 credits). The final 36 credits are obtained through attending courses, teaching etc.

Within EGRU, students are each allocated two slots per term at the weekly group meeting in order to present their work, or any topic that interests them. This provides an opportunity for feedback, and valuable presentation experience. EGRU PhD students also meet as a group once each week, together with two regular PDs. These weekly sessions provide an informal forum for troubleshooting and discussion, and alternate weeks are used as a journal club where one student presents a topic of interest.

EGRU operates an open door system for all supervisors so that the students can drop in at any time. Informally, the progress of the students is monitored by the supervisors, and regular meetings are held between the students and supervisors throughout their courses. If a student is seen to be struggling, they are asked to submit brief weekly reports to their supervisors on progress and plans for the following week, followed by a weekly meeting with one of the supervisors. This system has proven very effective.

The career prospects can most easily be judged by tracking the subsequent career paths of the graduated doctoral students. We have graduated 13 doctoral students since 1999, and seven of these within the RAE assessment period 2005-2010, all of whom have found good positions in academia or society (e.g. EU or governmental advisory positions).

One major factor in ensuring good career prospects is that students publish during the progress of their PhD-studies. The average PhD student in EGRU defends a thesis based on 6 chapters (peer-reviewed scientific papers), and is also likely to be engaged in research outside of his/her thesis. We endorse a policy in which a PhD-thesis should represent a substantial and significant body of research, as opposed to current reductionist trends of theses consisting of only 4 chapters. Learning to communicate research is an essential skill which cannot be learned without repetitive practice.
Students are also encouraged to present their results in international conferences or workshops, visit other laboratories to learn new skills, and to attend the best available courses worldwide to learn from experts. Hence, after earning their degrees, they are very competitive both in their scientific record and methodological/general knowledge. Students are encouraged to apply for small grants for travel, or to cover some research expenses, in order to gain experience with grant writing, and are also expected to contribute to EGRU’s publically available blog in order to gain some experience with science communication.

- **RC’s strengths and challenges related to the practises and quality of doctoral training, and the actions planned for their development.**

Our strength with respect to PhD-training is producing students with excellent academic skills and above-average publication records. Our students are also well networked, which is essential for finding a good position after graduation. Since EGRU is very strong, both in terms of people and facilities, there is a wealth of cutting edge projects for students to engaged with. The relatively high number of PDs allows for support and multidisciplinary training, and allows students to gather valuable, marketable methodological knowledge.

The primary challenges in PhD-training are twofold. 1st, recruiting students with the right set of skills, motivation and capacity to take up studies requiring knowledge both in genetics and evolutionary biology is difficult. Our remedy for this has been to seek students worldwide. 2nd, lack of tenured members and PD-turnover can create difficulties re-organizing teams to provide support for students. We have successfully addressed this by allocating PDs as 2nd supervisors, and by setting up a weekly PhD student meetings to provide additional support.

- **Description of how the RC interacts with and contributes to the society (collaboration with public, private and/or 3rd sector).**

While the research of EGRU deals largely with fundamental scientific rather than applied study problems, the societal impact is nevertheless notable. This can be understood considering the facts that much of our research builds upon understanding how species and populations are structured, as well as how they respond to environmental, climatic and anthropogenic selection. This knowledge is needed for identifying species and populations at risk now and in the future, as well as for designing conservation strategies and monitoring programs. Likewise, policies in respect to harvesting and land-use are in need of this information. To enhance the use of our expertise in applied research, we participate actively in research programs and consortiums of a more applied nature, such as fisheries stock assessment and fisheries management (ECOKNOWS, KESKALA), and research on genetic diversity in the Baltic Sea (BALTGENE).

The societal impact of ERGU’s research is well reflected in the attention we have gained in public and international media. News on our research articles are regularly published for example in major newspapers (e.g. Helsingin Sanomat) and magazines (e.g. Suomen Kuvalehti) in Finland, as well as international news portals. Expert opinions of several EGRU members have been sought by national radio channels, Finnish News Agency, and other national press, as well as international media such as BBC and journalists working for Nature and Science. Moreover, our advice has also been sought by Finnish Ministry of Environment in issues dealing with management of endangered species.

To communicate our research to the public, we actively promote our results to the media, either in the form of press releases or via direct contacts with journalists/reporters. In addition, we maintain a lively science blog (http://blogs.helsinki.fi/egru-blog/), wherein we not only communicate our own research,
but also discuss issues of general interest to people interested in genetics, ecology and evolution. The blog is well read by our peers abroad, and logs over 1000 visits monthly.

Our other societal activities involve participation in panel discussions, popular scientific talks delivered to general audiences, as well as service to various working groups where expert advice is wanted (e.g. WWF working-groups). We have also taken an active role in ongoing political discussions on science politics and decision making (e.g. fisheries regulation & energy politics). We find these activities useful, as they integrate our informed opinions into both public awareness and political decision-making processes. For example, EGRU members took the leading role in preparing the Faculty’s declaration on the legislation of salmon fisheries in Finland.

In respect to research training, our major societal impact relates to the fact that we train highly educated experts, many of whom end up working outside of academia. This shows that the skill set and education of EGRU students – together with a better than average publication record – prepares them well not only for academic careers, but also for careers elsewhere in society. Other important societal functions include our active participation in national and international graduate school activities, both as students and teachers.

**Ways to strengthen the societal impact of the RC’s research and doctoral training.**

Although we believe the communication of our research to society is already quite good, there is always room for further improvements. This involves encouraging especially PhD students to participate more actively with blogging (our research blog serves as an excellent training field for PhD students to sharpen their skills in writing about their own research, as well as research done by others, in an easily accessible and popular manner), encouraging EGRU members to prepare (more often) press releases on their publications, and taking an even more active role in writing popular scientific and opinion articles. We plan to increase our active solicitation of ideas for articles and news for national and international media through our contacts with journalist and reporters. Similarly, we will continue our active collaboration with applied scientists and seek to link our research with topics important and interesting to society. Conservation and management related questions will remain important parts of our research agenda.

**Description of the RC’s research collaborations and joint doctoral training activities and how the RC has promoted researcher mobility.**

EGRU's position as a leading, multidisciplinary research group is reflected in its extensive list of collaborators. During 2005-10, EGRU members have actively collaborated with 185 scientists from 105 different research institutes. Although some of these working relationships are newly developed and have not yet come to fruition, 123 of these collaborators have been listed as co-authors on ISI indexed journal articles.

The list of active collaborators can also be taken as evidence of EGRU’s strong international recognition. Collaborators are located in 28 different countries, with 69% emanating from European institutions (34% Nordic) and the remaining 31% from outside of Europe, predominantly North America and the Asia-Pacific region. Nationally, EGRU members collaborate with 30 scientists from 8 different research institutes. Internal collaborations within the Univ of Helsinki represent the largest number of national partnership (12). However, researchers from the Univ of Turku (8) are also significant partners given EGRU’s central involvement as core member of the CoE in Evolutionary Genetics and Physiology, a multi-disciplinary, inter-institutional group funded through the AoF.
The aforementioned lists included only those working relationships that have resulted in the publication of a peer-reviewed article, or for which active projects are underway. However, EGRU members are also affiliated with an even broader network of scientists through their participation in international research networks (e.g. Nordic Network in Evol Cons Biol [12 members from 7 countries]; BaltGene [31/8], ECOKNOWS [15/10], ESF ThermalAdapt [14/14], ESF ConGen [14/13]). Whilst future collaborations may develop from these contacts, involvement is equally important given the role that these networks play in supporting scientific research. Moreover, these groups have been instrumental in helping identify research priorities for the conservation and management of biodiversity.

EGRU members have been actively involved with three national graduate schools (GS): the Finnish GS in Wildlife Biology, Conservation & Management (LUOVA); the Biological Interactions GS (BIOINT) and the Population Genetics GS. Researchers have organized and taught in several courses and workshops, whereas all EGRU students have been members of the GSs. EGRU has also coordinated one NordForsk network (2002-7) and is currently part of another: these networks have a focus on PhD education. EGRU was also part of Marie Curie Training Network HOTSPOTS (2005-9), and is currently a partner in a submitted application for a similar network (BIOCHANGE).

The make-up EGRU itself is a testament to international mobility. Throughout the evaluation period, only 53% (24/45) of members were Finnish nationals. The remainder represent a diverse community from across the globe. Our international reflection becomes even more apparent if MSc students are excluded: counted this way, only 40% are of Finnish nationality. Additionally, EGRU has hosted 21 international scientists from 14 different countries, including short-term (1-7d) visits. Although the group has hosted fewer long-term visitors (3-6 months), these include researchers from a broad range of countries (Israel, Germany, Belgium, Portugal, Japan & Mexico).

RC's strengths and challenges related to research collaboration and researcher mobility, and the actions planned for their development.

As described above, our strength in research collaboration and research mobility is one of the defining features of our activity. At the same time, this can pose a challenge to efficiently manage associated resource costs. Additionally, extensive collaboration and mobility can risk time management issues with ramifications to the entire unit's functioning. Hence, our challenge is to ensure that collaborations and mobility do not start to interfere with our main functions: doing high quality science (which requires time for reflection) and providing good education and mentoring for our students and PDs. However, when this is in the best interest of EGRU's core values and objectives, we will continue to encourage mobility. For example, two of our PhD students have attended a specialized course in stickleback genomics at Stanford University (USA), featuring preeminent international experts. Given the value this provides both the student and EGRU at large, we will continue to encourage participation in this, and similar opportunities.

5 OPERATIONAL CONDITIONS (MAX. 4400 CHARACTERS WITH SPACES)

- Description of the operational conditions in the RC's research environment (e.g. research infrastructure, balance between research and teaching duties).

EGRU consists of people sharing common research interests and goals, but with wide variety in terms of their background, analytical expertise and methodological skills (e.g. quantitative and population genetics, genomics, evolutionary ecology and modeling). Accordingly, the RC employs a wide range of approaches including molecular genetics, functional genomics, breeding experiments, statistical genetics, field surveys and modeling. Close interactions within this multidisciplinary working
environment make it possible to use the most appropriate methodological approach for a given the study problem. The facilities are available to support this, and we use many different facilities and infrastructures as described below.

We have full access to the Molecular Ecology and Systematics laboratory, which is a large core facility at the department. It is well equipped for both DNA and RNA analyses and provides the majority of the services that are needed for our molecular genetic work (i.e. sequencing and genotyping). We are actively utilizing this laboratory as shown in annual reports (e.g. > 70% of genotyping runs in this lab are by EGRU). In addition, the Viikki Biocenter Core Facility has equipment for high-throughput genomic approaches (e.g. 454-GS FLX Titanium & Illumina Golden gate platforms). We have also access to the National DNA Microarray Centre facility in BioCity Turku.

We have built up modern laboratory facilities for maintaining fish. These facilities are run by EGRU members and are regularly improved in accordance with the requirements of each experimental design. Currently, we have multiple systems to breed fish at the individual and population/family levels. The facilities have control systems for temperature and photoperiod, enabling us to conduct rigorously controlled experiments for genetic studies. We also utilize the Turku Animal Physiology lab, which is well equipped for physiological measurements (e.g. energy metabolism, oxygen consumption & enzyme activities). In addition, we have access to a large frog breeding and experimental facility at Uppsala University through collaborations.

We utilize a network of biological stations owned by the University of Helsinki, encompassing Baltic Sea (Tvärminne), lacustrine (Lammi) and sub-arctic (Kilpisjärvi) environments. In addition, we have access to various field stations and facilities of other institutes. We also possess a very large collection of samples (several tens of thousands) of fish, amphibians and birds and have databases to manage them – an important resource for future projects.

We have 2 full time technicians who contribute to many lab-based projects thus enabling us to work on bigger scale projects. In addition, we have a full time administrative assistant who manages much of the workload of the administration.

As to the balance between research and teaching, the major of Ecology and Evolutionary Biology has for a long had the fortunate situation that the burden of teaching is shared by large number of people. Many EGRU members (including PDs and students), have contributed regularly to university teaching, but this has not impinged significantly on research time. In addition we contribute to teaching in graduate and summer schools both nationally and internationally.

- RC’s strengths and challenges related to operational conditions, and the actions planned for their development.

The ability to conduct multidisciplinary research combining competences from different biological fields is now highly valued, as is evident e.g. by the emergence of systems biology and ecological genomics. The wide range of facilities together with healthy funding allow us to perform a wide range of research, attracting researchers from a variety of fields to do multidisciplinary research within a single group.

Shortage of office space and centralization of administrative functions by the university pose considerable challenges. We have solved the latter problem – and increased the former - by hiring our own administrative assistant. We also aim to hire a person to manage the fish breeding facilities and free PDs & students from this fulltime work. Another challenge that we face is long waiting times with the sequencing services at our campus. We have solved this by outsourcing our work abroad in hope
that the level and speed of service in Viikki will improve in future. Finally, one of the most important infrastructures to us is our CoE – maintaining that status is an important goal.

6 LEADERSHIP AND MANAGEMENT IN THE RESEARCHER COMMUNITY (MAX. 4400 CHARACTERS WITH SPACES)

- Description of the execution and processes of leadership in the RC, how the management-related responsibilities and roles are distributed in the RC and how the leadership- and management-related processes support high quality research, collaboration between principal investigators and other researchers in the RC, the RC’s research focus and strengthening of the RC’s know-how.

EGRU has grown around Academy Prof. Juha Merilä. Over the last 5 years, 19 PDs have joined the RC of which 4 have attained a senior PI status with independent funding and freedom to develop their own projects. This means that the senior researchers have full responsibility when it comes to the supervision of PDs and PhD-students. Important decisions affecting the whole group (e.g. joint applications, establishment of external collaborations, prioritizing use of common facilities) are brought-up in the weekly group meetings and debated among all EGRU members. As a result, responsibilities are allocated according to the expertise and availability of the different members.

Due to the large size of EGRU, both in terms of personnel and research projects, there is a considerable amount of management and administration required. Management of the molecular genetics lab is the responsibility of the technical staff (Marika Karjalainen & Kirsi Kähkönen). Management of the experimental facilities (i.e. safety requirements, maintenance) is coordinated among the PI’s involved with ongoing experiments. Administration is the responsibility of our research assistant (Marika Lilja), thus freeing researchers’ time.

The implementation and prioritization of the projects is discussed among the PIs at different stages (i.e. design, implementation and analysis), which ensures that projects are sound and the efforts optimized. Active interactions among the PIs also helps to share expertise as well as benefiting the training and supervision of PDs and PhD students. It is not rare that, as a result of these interactions, supervision of students is shared according to the expertise of the different PIs/PDs and the needs of the students. This also means that each project is not a closed entity and students and PDs may contribute to different projects. Collaboration among the EGRU members, irrespectively of their seniority status, is critical to the success of our multidisciplinary activity.

Most of our projects are articulated around larger “umbrella” initiatives. Examples include our CoE and the BaltGene project, each of which host multiple projects led by different PIs and PDs. This ensures that, while preserving the independence of the PIs, the approaches and goals are coordinated, and contribute in a synergic fashion to answer broad questions in evolutionary biology and genetics. PIs have the responsibility to ensure that these large initiatives stay on focus and lead to the optimization of topics and resources.

Our coordinated leadership strategy has allowed the group to grow significantly and attain international recognition. Prof Merilä has kept the focus of EGRU around the study of ecological genetics/genomics of wild vertebrate populations and generated a critical mass of independent PIs with complementary expertise (e.g. genomics; behavioral & evolutionary ecology; population & quantitative genetics and evolutionary modeling). EGRU is able to provide a high quality research and training environment which is able to cope with a high turnover rate of researchers (typical PDs stay 2-3 yrs) which has both negative (loss of experience & competence) and positive sides (keeps the RC up-to-date and competitive with new skills and perspectives).
RC's strengths and challenges related to leadership and management, and the actions planned for developing the processes.

It is precisely the success of EGRU that poses the major challenges, since it is difficult consolidating the critical mass of PIs and assisting staff which has taken years of collaboration and commitment to work efficiently. It is important to find ways of keep and increase the network of PIs in the community to avoid losing leadership skills gained within the RC while acquiring novel know-how. To keep-up with this challenge EGRU has applied for a new term as a Centre of Excellence (under evaluation), this type of funding supports the current leadership structure of EGRU by having a Centre Leader (coordinates the whole network), Team Leaders (coordinate research groups by areas of expertise) and group leaders (postdocs responsible for specific projects). We also hope that as a result of this evaluation process, Helsinki University will contribute to the consolidation and growth of our leadership and management structure.

### 7 External Competitive Funding of the RC

- **Listing of the RCs external competitive funding, where:**
  - the funding decisions have been made during 1.1.2005-31.12.2010, and
  - the administrator of the funding is/has been the University of Helsinki

- **Academy of Finland (AF)** - total amount of funding (in euros) AF has decided to allocate to the RC members during 1.1.2005-31.12.2010: **5510000**

- **Finnish Funding Agency for Technology and Innovation (TEKES)** - total amount of funding (in euros) TEKES has decided to allocate to the RC members during 1.1.2005-31.12.2010:  

- **European Union (EU)** - total amount of funding (in euros) EU has decided to allocate to the RC members during 1.1.2005-31.12.2010: **300000**

- **European Research Council (ERC)** - total amount of funding (in euros) ERC has decided to allocate to the RC members during 1.1.2005-31.12.2010:  

- **International and national foundations** - names of international and national foundations which have decided to allocate funding to the RC members during 1.1.2005-31.12.2010, and the amount of their funding (in euros).
  - names of the foundations: Maj and Tor Nessling Foundation, CIMO
  - total amount of funding (in euros) from the above-mentioned foundations: **50000**

- **Other international funding** - names of other international funding organizations which have decided to allocate funding to the RC members during 1.1.2005-31.12.2010, and the amount of their funding (in euros).
  - names of the funding organizations: NordForsk, BONUS EEIG
  - total amount of funding (in euros) from the above-mentioned funding organizations: **280000**
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 2 MATERIAL

- **Other national funding** (incl. EVO funding and Ministry of Education and Culture funded doctoral programme positions) - names of other national funding organizations which have decided to allocate funding to the RC members during 1.1.2005-31.12.2010, and the amount of their funding (in euros).
  - names of the funding organizations: Population genetics GS
  - Finnish School in Wildlife Biology, Conservation and Management (LUOVA)
  - total amount of funding (in euros) from the above-mentioned funding organizations: 600000

8 RC’S STRATEGIC ACTION PLAN FOR 2011–2013 (MAX. 4400 CHARACTERS WITH SPACES)

- **Description of the RC’s future perspectives in respect to research and doctoral training.**
  
  Our strategic plan for 2011-2013 is to continue to do high quality, internationally competitive evolutionary biology and genetics research, and while doing it, identify and incorporate new perspectives and approaches to improve the quality and impact of our research. Although high-quality fundamental research is the focal point of our strategic plans, applied research projects and dissemination of science to the public are envisioned to continue be important elements in our activities. Likewise, training of PhD-students and post doctoral researchers, as well as community service in terms of active participation in teaching, editorial and other academic activities remain important components of our activities.

  As to our specific research mission, we aim to continue to pursue questions surrounding animal adaptation to environmental heterogeneity and changes. This will be accomplished by continuing to use the experimental and quantitative genetic methods upon which EGRU has built its reputation, whilst further expanding into modern genomic approaches. As to the latter, we recognize the need to strengthen our competence in bioinformatics and model based population genomic approaches via recruitment and collaboration. While we endorse diversity and versatility – both in terms of approaches and model systems – we also recognize the need to restrict ourselves to a limited number of key model systems. In this respect, the work with bird models (with possible exceptions of studies based on long-term data on red-billed gull, Larus novahollandiae) will be successively discontinued, and the focus will shift to fish (ninespine stickleback, Pungitius pungitius; three-spine stickleback, Gasterosteus aculeatus, herring, Clupea harengus) and amphibian (Rana temporaria) models. That said, general model free problems and phenomena will remain at the core of our interests.

  On an operational level, an important goal for the unit is to secure funding and salaries for research and personnel. The following key goals can be recognized:

  1. Attempt to renew our status as a Center of Excellence for 2012-2016 is in progress, and our application has passed to the 2nd stage (one of 36 out of 135 applications selected in the 1st round) of the evaluation process.

  2. Attempt to renew Academy professorship of Prof Merilä for 2012-2016 is in progress and his application has passed to the 2nd stage (one of the 7 out of 23 applicants).

  3. Senior post-docs (e.g. Gabor Herczeg, Anna Kupariinen) should be in a good position for obtaining 5-year Academy Researcher positions and research projects in 2011-2013.

  4. Younger post-docs (e.g. Scott McCairns) without their own funding should be in a good position to secure Academy of Finland’s 3-year post-doctoral project funding (application pending; Amber Teacher, Phillip Gienapp & Gabor Herczeg already have theirs).
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 2 MATERIAL

With respect to educational activities, we will continue to implement the successful model of maintaining a ratio of PhD-students to post-docs in the group that is close to one. This goal serves to ensure mutual benefits both to students and postdocs in terms of learning and mentoring processes. In line with EGRU’s history and current level of internationalization, as well as the widely recognized need for internationalization of Finnish science in general, new recruitments (at all levels) will be made by announcing vacant positions internationally.

Other key strategic goals of our unit include the upgrading and maintenance of key infrastructural resources, such as our aquaculture facilities. Apart from the employment issues mentioned above, securing future funding to continue the employment of our key technical personnel (laboratory technicians and research assistants) remains a central strategic goal.

Finally, our goal for 2011-2013 is to set up an advanced MSc level course in “Ecological and Evolutionary Genetics” drawing largely from the knowledge and competence of EGRU-researchers to educate students on core principles and latest developments in Ecological Genetics using examples from our own research. We see this course as (i) an important community service to our faculty, (ii) a way to structure and frame our own perception of what are interesting and important problems in our research field, and (iii) a way to inspire and recruit young people to MSc and PhD projects.

These materials were prepared as a joint effort by EGRU. Initially, the ideas were discussed in a group meeting (11.01.2011) and first drafts for the different sections were prepared as follows: 1. J. Merilä, 2. A. Teacher 3. A. Kuparinen, 4. S. Cairns, 5. T. Shikano, 6. J.M. Cano Arias, 7. M. Lilja, 8. J. Merilä. After few rounds of commenting, the document was distributed to rest of the unit for comments, and discussed again in a group meeting (8.2.2011). Furthermore, PhD students discussed and commented on the penultimate version in a meeting of their own (4.2.2011) without presence of the senior personnel. Comments from this meeting were passed anonymously to J. Merilä, and the value of feedback from the doctoral students become very obvious. In the future we plan to repeat this exercise on a regular basis in order to highlight opportunities for improvement. Final editing was done by Juha Merilä and Marika Lilja.

NB. We note that the document was finalized on our behalf BEFORE UH informed (7.2.2011) about the evaluation criteria aspects and how they relate to 9 questions.
APPENDIX 1: Ecological Genetics Research Unit (EGRU), responsible person Juha Merilä

Table 1. Recruitment origin of EGRU doctoral students (section 2, practices and quality of doctoral training).

<table>
<thead>
<tr>
<th>Recruitment</th>
<th>Total number out of 22 doctoral students</th>
<th>Total number out of 16 students within the RAE assessment period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied for an advertised PhD position within the group</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Came with own project idea and money</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Came with own money</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Recruited from MSc or research assistantship</td>
<td>9</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 2. Current careers of graduated PhD students from EGRU (section 2, practices and quality of doctoral training).

<table>
<thead>
<tr>
<th>Current job title of graduated doctoral students from EGRU</th>
<th>Total number out of 13 doctoral students</th>
<th>Total number out of 7 students within RAE assessment period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-doctoral research in Finland</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Post-doctoral research abroad</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Governmental advisory position</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>EU level administration</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>University administration</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Head of Natural History Museum</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 3. EGRU member involvement in international research networks (section 4, International and national (incl. intersectoral) research collaboration and researcher mobility). ThermAdapt and ConGen are initiatives of the European Science foundation for which EGRU members serve as members of the steering committees.

<table>
<thead>
<tr>
<th>Network</th>
<th>No. of members</th>
<th>No. of member countries</th>
<th>No. of EGRU members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nordic network in Evolutionary Conservation Biology</td>
<td>12</td>
<td>7</td>
<td>all</td>
</tr>
<tr>
<td>Nordic Network in Environmental Stress Research (NONSESTRES)</td>
<td>6</td>
<td>5</td>
<td>all</td>
</tr>
<tr>
<td>BalticGene (BONUS EEIG project)</td>
<td>31</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>ECOKNOWS (EU FP7 project)</td>
<td>15</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>HOTSPOTS (Marie Curie project)</td>
<td>15</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>European Science Foundation</td>
<td>80</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>ThermAdapt</td>
<td>14</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>ConGen</td>
<td>14</td>
<td>13</td>
<td>1</td>
</tr>
</tbody>
</table>
Figure 1. Nationality of EGRU members encompassing the evaluation period (2005-2010; A) and those currently active in the research group (B) (section 4, International and national (incl. intersectoral) research collaboration and researcher mobility).
# Analysis of publications

- Associated person is one of Juha Merilä, Juha.Merila@helsinki.fi, Anna Kuparinen, Anna.Kuparinen@helsinki.fi, Jussi Alho, Jussi.Alho@helsinki.fi, José Manuel Cano Arias, jose.canoarias@helsinki.fi, Philip Gienapp, philip.gienapp@helsinki.fi, Gabor Herczeg, gabor.herczeg@helsinki.fi, Scott McCairs, scott.mccairs@helsinki.fi, Takahito Shikano, takahito.shikano@helsinki.fi, Yukinori Shimada, yukinori.shimada@helsinki.fi, Amber Teacher, amber.teacher@helsinki.fi, Nina Trockovic, Nina.Trockovic@helsinki.fi, Jennifer De Faveri, jacqui.faveri@helsinki.fi, Maria Abigel Gonda, abigel.gonda@helsinki.fi, Abhilash Nair, abhilash.nair@helsinki.fi, Bineet Panda, bineet.panda@helsinki.fi, Scott McCairs, scott.mccairs@helsinki.fi, John Loehr, john.loehr@helsinki.fi, Robert O'Hara, rober.o'hara@helsinki.fi, Scott McCairs, scott.mccairs@helsinki.fi, Robert O'Hara, rober.o'hara@helsinki.fi, Robert O'Hara, rober.o'hara@helsinki.fi, Scott McCairs, scott.mccairs@helsinki.fi.

<table>
<thead>
<tr>
<th>Publication type</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Total Count 2005 - 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 Refereed journal article</td>
<td>24</td>
<td>20</td>
<td>28</td>
<td>38</td>
<td>39</td>
<td>186</td>
<td></td>
</tr>
<tr>
<td>A2 Review in scientific journal</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3 Contribution to book/other compilations (refereed)</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A4 Article in conference publication (refereed)</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1 Unrefereed journal article</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td></td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>B2 Contribution to book/other compilations (non-refereed)</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2 Edited book, compilation, conference proceeding or special issue of journal</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D1 Article in professional journal</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E1 Popular article, newspaper article</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>13</td>
<td>6</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>E2 Popular monograph</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

EGRU/Merilä

2 Listing of publications

A1 Refereed journal article

2005


INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

EGRU/Merilä


2006
Fried, MS, O’Hara, RB, Brommer, JE 2006, 'Consequences of the spatial configuration of resources for the distribution and dynamics of the endangered Parmassius apollo butterfly', Biological Conservation, vol 130, no. 2, pp. 183-192.

2007


Knopp, T, Cano, JM, Crochet, P, Merilä, J 2007, 'Contrasting levels of variation in neutral and quantitative genetic loci on island populations of moor frogs (Rana arvalis)', Conservation Genetics, vol 8, no. 1, pp. 45-56.


Cano, JM, Mäkinen, HS, Merilä, J 2008, 'Genetic evidence for male-biased dispersal in the three-spined stickleback (Gasterosteus aculeatus)', Molecular Ecology, vol 17, no. 14, pp. 3234-3242.


Lesbarres, D, Merilä, J, Lode, T 2008, 'Male breeding success is predicted by call frequency in a territorial species, the agile frog (Rana dalmatina)', Canadian Journal of Zoology, vol 86, no. 11, pp. 1273-1279.


Mäkinen, HS, Merilä, J 2008, 'Mitochondrial DNA phylogeography of the three-spined stickleback (Gasterosteus aculeatus) in Europe: Evidence for multiple glacial refuges', Molecular Phylogenetics and Evolution.


INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

EGRU/Merilä


Jaari, S, Jaatinen, K, Merilä, J 2009, 'Isolation and characterization of 22 polymorphic microsatellite loci for the Barrow’s goldeneye (Bucephala islandica)', Molecular Ecology Resources, vol 9, no. 3, pp. 806-808.


O’Hara, RB 2009, 'How to make models add up - a primer on GLMMs', Annales Zoologici Fennici, vol 46, pp. 124-137.


2010


EGRU/Merilä

2010


Li, M, Merila, J 2010, 'Sex-specific population structure, natural selection, and linkage disequilibrium in a wild bird population as revealed by genome-wide microsatellite analyses', BMC Evolutionary Biology, vol 10, no. 1-11.

Li, MH, Merila, J 2010, 'Extensive linkage disequilibrium in a wild bird population', Heredity, vol 104, no. 6, pp. 600-610.


Shikano, T, Shimada, Y, Herczeg, G, Merila, J 2010, 'History vs. habitat type: explaining the genetic structure of European nine-spined stickleback (Pungitius pungitius) populations', Molecular Ecology, vol 19, no. 6, pp. 1147-1161.


A2 Review in scientific journal

2008


2009

A3 Contribution to book/other compilations (refereed)

2006

2008

2009


A4 Article in conference publication (refereed)

2008

B1 Unrefereed journal article

2005


2006

INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

EGRU/Merilä


2008


2009


B2 Contribution to book/other compilations (non-refereed)

2006


2010


C2 Edited book, compilation, conference proceeding or special issue of journal

2009


D1 Article in professional journal

2006


2008


E1 Popular article, newspaper article

2005


2006


2007

Merilä, J 2007, "Miksi norsut pelkäävät hiiriä?", Tiede, no. 7, pp. 64.


2009


2010


E2 Popular monograph

2007
1 Analysis of activities 2005-2010

### Activity type

| Supervisor or co-supervisor of doctoral thesis | 25 |
| Prices and awards                              | 5  |
| Editor of research journal                      | 27 |
| Peer review of manuscripts                      | 196|
| Assessment of candidates for academic posts     | 21 |
| Membership or other role in review committee   | 28 |
| Membership or other role in research network   | 3  |
| Membership or other role in national/international committee, council, board | 44 |
| Membership or other role in public Finnish or international organization | 8 |
| Membership or other role of body in private company/organisation | 6 |
| Participation in interview for written media    | 25 |
| Participation in radio programme                | 1 |
| Participation in interview for web based media  | 1 |
2 Listing of activities 2005-2010

Supervisor or co-supervisor of doctoral thesis
Juha Merilä , Juha.Merila@helsinki.fi
Doctroal student supervisor, Fredrik Söderman, Juha Merilä, 2000 → 2006, Sweden
Doctroal student supervisor, Hanna-Piha, Juha Merilä, 2002 → 2006, Finland
Doctroal student supervisor, Theresa Knapp, Juha Merilä, 2002 → 2008, Finland
Doctroal student supervisor, Hannu Mäki, Juha Merilä, 2003 → 2007, Finland
Doctroal student supervisor, Jussi Aho, Juha Merilä, 2005 → 2010, Finland
Doctroal student supervisor, Tuomas Leinonen, Juha Merilä, 2005 → 2010, Finland
Doctroal student supervisor, Kaisa Välimäki, Juha Merilä, 2007 → ..., Finland
Doctroal student supervisior, Abigail Gunda, Juha Merilä, 2008 → ..., Finland
Doctroal student supervisor, Abhilasha Nair, Juha Merilä, 2009 → ..., Finland
Doctroal student supervisior, Binnet Panda, Juha Merilä, 2009 → ..., Finland
Doctroal student supervisior, Jacqueline DeFaveri, Juha Merilä, 2009 → ..., Finland
Doctroal student supervisior, Markku Karhunen, Juha Merilä, 2009 → ..., Finland
Doctroal student supervisior, Monica Rodrigues, Juha Merilä, 2009 → ..., Portugal
Doctroal student supervisior, Nurul Izla Ab Ghani, Juha Merilä, 2009 → ..., Finland
Doctroal student supervisior, Niels Falsted Thorsen, Juha Merilä, 2010, Norway
José Manuel Cano Arias, jose.canoarias@helsinki.fi
PHD supervisior, José Manuel Cano Arias, 2005 → 05.02.2010, Finland
PHD thesis supervisior (in progress), José Manuel Cano Arias, 16.10.2010 → ..., Finland
Gabor Herczeg, gabor.herczeg@helsinki.fi
Supervising PHD project, Gabor Herczeg, 2008 → ..., Finland
Supervising PHD project, Gabor Herczeg, 2008 → ..., Hungary
Supervising PHD project, Gabor Herczeg, 2009 → ..., Finland
Supervising PHD project, Gabor Herczeg, 2009 → ..., Finland
Supervising PHD project, Gabor Herczeg, 2009 → ..., Finland
Supervising PHD project, Gabor Herczeg, 2009 → ..., Finland
Supervising PHD project, Gabor Herczeg, 2010 → ..., Finland
Supervising PHD project, Gabor Herczeg, 2010 → ..., Hungary
Amber Teacher, amber.teacher@helsinki.fi
PHD supervisior for: "Conservation genetics of frogs in a biodiversity hotspot", Amber Teacher, 01.02.2010 → ...

Prizes and awards
Juha Merilä , Juha.Merila@helsinki.fi
Elected to Finnish Academy of Science and Letters, Juha Merilä, 2005
Excellent pro gradu (MSc thesis) supervisor, Juha Merilä, 2010
Takahito Shikano, takahito.shikano@helsinki.fi
Japan Society for the Promotion of Science and Academy of Finland Postdoctoral Fellowship, Takahito Shikano, 08.2008 → 07.2010
Tuomas Leinonen, tuomas.leinonen@helsinki.fi
Best MSc thesis of 2005, Tuomas Leinonen, 2005, Finland
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPLICATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

EGRU/Merilä

Kim Jaatinen, kim.jaatinen@helsinki.fi

Editor of research journal
Juha Merilä, Juha.Merila@helsinki.fi
Annales Zoologici Fennici, Juha Merilä, 2005, Finland
Bista, Journal of Biology and Ecology, Juha Merilä, 2005, Slovenia
Journal of Evolutionary Biology, Juha Merilä, 2005, United Kingdom
Bista, Journal of Biology and Ecology, Juha Merilä, 2006, Slovenia
Evolutionary Applications, Juha Merilä, 2006
Journal of Evolutionary Biology, Juha Merilä, 2006, United Kingdom
Yearbook in Evolutionary Biology, Annals of New York Academy of Science, Juha Merilä, 2006
Evolutionary Applications, Juha Merilä, 2007
Journal of Evolutionary Biology, Juha Merilä, 2007, United Kingdom
Yearbook in Evolutionary Biology, Annals of New York Academy of Sciences, Juha Merilä, 2007, United Kingdom
Evolutionary Applications, Juha Merilä, 2008
Evolutionary Applications, Juha Merilä, 2009
Yearbook in Evolutionary Biology, Annals of New York Academy of Sciences, Juha Merilä, 2009
Evolutionary Applications, Juha Merilä, 2010
Yearbook in Evolutionary Biology, Annals of New York Academy of Sciences, Juha Merilä, 2010

José Manuel Cano Arias, jose.canoarias@helsinki.fi
Journal of Evolutionary Biology, José Manuel Cano Arias, 01.01.2005 -- 31.12.2005
Conservation Genetics, José Manuel Cano Arias, 01.01.2006 -- 31.12.2006, Netherlands
Journal of Fish Biology, José Manuel Cano Arias, 01.01.2006 -- 31.12.2006, United Kingdom
Biological Conservation, José Manuel Cano Arias, 01.01.2007 -- 31.12.2007
Journal of Fish biology, José Manuel Cano Arias, 01.01.2007 -- 31.12.2007

Robert O’Hara, mathdept@cc.helsinki.fi
Editor of Ecology and Evolutionary Biology, Robert O’Hara, 2006
Editor of Journal of Negative Results, Robert O’Hara, 2006
Editor of Ecology and Evolutionary Biology, Robert O’Hara, 2007
Editor of Journal of Negative Results, Robert O’Hara, 2007
Editor of Ecology and Evolutionary Biology, Robert O’Hara, 2008
Editor of Journal of Negative Results, Robert O’Hara, 2008

Peer review of manuscripts
Juha Merilä, Juha.Merila@helsinki.fi
Evolution, Juha Merilä, 2005, United States
Genetics, Juha Merilä, 2005, United States
Science, Juha Merilä, 2005, United States
Evolution, Juha Merilä, 2006, United States
Genetics, Juha Merilä, 2006, United States
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

EGRU/Merilä

Science, Juha Merilä, 2006, United States
Evolutionary Applications, Juha Merilä, 2007, Canada
Genetics, Juha Merilä, 2007
Science, Juha Merilä, 2007, United States
Applied Herpetology, Juha Merilä, 31.08.2008
Canadian Journal of Fisheries and Aquatic Sciences, Juha Merilä, 13.07.2008
Canadian Trends in Ecology and Evolution, Juha Merilä, 22.06.2008
Conservation Genetics, Juha Merilä, 2008
Ecography, Juha Merilä, 08.09.2008
Evolution, Juha Merilä, 2008
Evolutionary Applications, Juha Merilä, 2008
Genetics, Juha Merilä, 2008
Heredity, Juha Merilä, 19.09.2008
Journal of Zoology, Juha Merilä, 20.08.2008
Molecular Ecology and Resources, Juha Merilä, 22.06.2008
Oecologia, Juha Merilä, 2008
Proceedings of the National Academy of Sciences U.S.A, Juha Merilä, 07.11.2008
Trends in Ecology and Evolution, Juha Merilä, 22.06.2008
American Naturalist, Juha Merilä, 29.04.2010
American Naturalist, Juha Merilä, 05.11.2010
Annals of New York Academy of Sciences, Juha Merilä, 15.01.2010
Aquatic Toxicology, Juha Merilä, 19.04.2010
Belgian Journal of Zoology, Juha Merilä, 12.12.2010
Biological Journal of the Linnean Society, Juha Merilä, 05.07.2010
Biology Letters, Juha Merilä, 23.11.2010
Conservation Genetics, Juha Merilä, 01.11.2010
Ecography, Juha Merilä, 07.03.2010
Ecography, Juha Merilä, 21.07.2010
Ecological research, Juha Merilä, 12.12.2010
Ecotoxicology, Juha Merilä, 08.12.2010
Evolution, Juha Merilä, 14.01.2010
Evolution, Juha Merilä, 31.08.2010
Evolution, Juha Merilä, 05.11.2010
Evolutionary Applications, Juha Merilä, 29.08.2010
Evolutionary Ecology Research, Juha Merilä, 12.06.2010
Fly, Juha Merilä, 19.07.2010
Fundamental and Applied Limnology, Juha Merilä, 01.04.2010
Genetica, Juha Merilä, 31.08.2010
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

Juha Merilä

Genetics Research, Juha Merilä, 09.07.2010
International Research Journal of Agricultural Science, Juha Merilä, 25.01.2010
Italian Journal of Zoology, Juha Merilä, 16.01.2010
Journal of Evolutionary Biology, Juha Merilä, 02.11.2010
Journal of Fish Biology, Juha Merilä, 22.11.2010
Molecular Ecology, Juha Merilä, 17.03.2010
Molecular Ecology, Juha Merilä, 26.12.2010
Oecologia, Juha Merilä, 29.07.2010
PLoS One, Juha Merilä, 08.12.2010
Photochemistry and Photobiology, Juha Merilä, 22.07.2010
Proceedings B, Juha Merilä, 17.07.2010
Proceedings B, Royal Society of London, Juha Merilä, 27.12.2010, United Kingdom
Referee for Investigative Genetics, Juha Merilä, 08.07.2010
Science, Juha Merilä, 28.06.2010

Anna Kuparinen, Anna.Kuparinen@helsinki.fi

Annals of Botany, Anna Kuparinen, 2006
Journal of Theoretical Biology, Anna Kuparinen, 2007
The American Naturalist, Anna Kuparinen, 2007
Canadian Journal of Fisheries and Aquatic Sciences, Anna Kuparinen, 2008
Canadian Journal of Fisheries and Aquatic Sciences, Anna Kuparinen, 2008
Ecology Letters, Anna Kuparinen, 2008
Trends in Ecology and Evolution, Anna Kuparinen, 2008
Ecological Applications, Anna Kuparinen, 2009
Evolutionary Applications, Anna Kuparinen, 2009
Evolutionary Applications, Anna Kuparinen, 2010
Fish and Fisheries, Anna Kuparinen, 2010
Heredity, Anna Kuparinen, 2010
Proceedings of the Royal Society B, Anna Kuparinen, 2010
Proceedings of the Royal Society B series, Anna Kuparinen, 2010

Jussi Alho, Jussi.Alho@helsinki.fi

Evolution, Jussi Alho, 2009
Biology Letters, Jussi Alho, 2010
Oikos, Jussi Alho, 2010

Phillip Gienapp, philip.gienapp@helsinki.fi

Behavioral Ecology, Phillip Gienapp, 2006 → ...
Global Change Biology, Phillip Gienapp, 2006 → ...
Proceedings of the Royal Society B, Phillip Gienapp, 2006 → ...
Journal of Evolutionary Biology, Phillip Gienapp, 2007
Trends in Ecology and Evolution, Phillip Gienapp, 2007 → ...
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

EGRU/Meriä

Functional Ecology, Philip Gianapp, 2008 → ...
Heredity, Philip Gianapp, 2008 → ...
Journal of Animal Ecology, Philip Gianapp, 2008 → ...
Oecologia, Philip Gianapp, 2008 → ...
Behavioral Ecology and Sociobiology, Philip Gianapp, 2009 → ...
Ecological Applications, Philip Gianapp, 2009 → ...
Evolutionary Applications, Philip Gianapp, 2009 → ...
Oikos, Philip Gianapp, 2009 → ...
American Naturalist, Philip Gianapp, 2010 → ...
Animal Behaviour, Philip Gianapp, 2010 → ...
Evolution, Philip Gianapp, 2010 → ...
Gabor Herczeg, gabor.herczeg@helsinki.fi

Copelia, Gabor Herczeg, 2006
Journal of Evolutionary Biology, Gabor Herczeg, 2006
Journal of Evolutionary Biology, Gabor Herczeg, 2007
Oecologia, Gabor Herczeg, 2007
Ecography, Gabor Herczeg, 2008
Acta Zoologica Academiae Scientiarum Hungaricae, Gabor Herczeg, 2009
American Naturalist, Gabor Herczeg, 2009
Amphibia-Reptilia, Gabor Herczeg, 2009
Animal Behavior, Gabor Herczeg, 2009
Annales Zoologici Fennici, Gabor Herczeg, 2009
Applied Herpetology, Gabor Herczeg, 2009
Behavioral Ecology, Gabor Herczeg, 2009
Behavioral Ecology and Sociobiology, Gabor Herczeg, 2009
Canadian Journal of Zoology, Gabor Herczeg, 2009
Functional Ecology, Gabor Herczeg, 2009
Journal of Evolutionary Biology, Gabor Herczeg, 2009
Journal of Zoology, Gabor Herczeg, 2009
Mertensiella, Gabor Herczeg, 2009
Oecologia, Gabor Herczeg, 2009
Amphibia-Reptilia, Gabor Herczeg, 2010
Annales Zoologici Fennici, Gabor Herczeg, 2010
Behavioral Ecology, Gabor Herczeg, 2010
Biological Journal of the Linnean Society, Gabor Herczeg, 2010
Ethology, Gabor Herczeg, 2010
Journal of Fish Biology, Gabor Herczeg, 2010
Journal of Herpetology, Gabor Herczeg, 2010
Journal of Thermal Biology, Gabor Herczeg, 2010
Molecular Ecology, Gabor Herczeg, 2010
Oecologia, Gabor Herczeg, 2010
Oikos, Gabor Herczeg, 2010
Scott McCairns, scott.mccairns@helsinki.fi
Molecular Ecology, Scott McCairns, 2005 → 2011
Journal of Evolutionary Biology, Scott McCairns, 2010 → 2011
Journal of Experimental Biology, Scott McCairns, 2010 → 2011
Takahito Shikano, takahito.shikano@helsinki.fi
Aquaculture, Takahito Shikano, 09.2005
Aquaculture, Takahito Shikano, 03.2005
Heredity, Takahito Shikano, 02.2005
Heredity, Takahito Shikano, 01.2005
Aquaculture, Takahito Shikano, 11.2007
Aquaculture, Takahito Shikano, 09.2007
Aquaculture, Takahito Shikano, 09.2007
Comparative Biochemistry and Physiology, Takahito Shikano, 10.2007
Heredity, Takahito Shikano, 08.2007
Aquaculture, Takahito Shikano, 11.2008
Aquaculture, Takahito Shikano, 08.2008
Aquaculture, Takahito Shikano, 06.2008
US National Science Foundation, Takahito Shikano, 10.2008
Aquaculture, Takahito Shikano, 12.2009
Aquaculture, Takahito Shikano, 11.2009
Aquaculture, Takahito Shikano, 05.2009
Aquaculture, Takahito Shikano, 01.2009
Aquaculture, Takahito Shikano, 03.2009
Aquaculture Research, Takahito Shikano, 01.2009
Biological Journal of the Linnean Society, Takahito Shikano, 04.2009
Heredity, Takahito Shikano, 07.2009
Molecular Ecology, Takahito Shikano, 06.2009
Molecular Ecology, Takahito Shikano, 03.2009
US National Science Foundation, Takahito Shikano, 03.2009
Aquaculture, Takahito Shikano, 12.2010
Aquaculture, Takahito Shikano, 10.2010
Aquaculture, Takahito Shikano, 10.2010
Aquaculture, Takahito Shikano, 10.2010
Aquaculture, Takahito Shikano, 07.2010
Aquaculture, Takahito Shikano, 07.2010
Aquaculture, Takahito Shikano, 03.2010
Aquaculture, Takahito Shikano, 02.2010
Aquaculture, Takahito Shikano, 04.2010
Journal of Heredity, Takahito Shikano, 12.2010
Molecular Ecology, Takahito Shikano, 03.2010
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

EGRU/Merilä

Molecular Ecology, Takahito Shikano, 12.2010
Molecular Ecology Resources, Takahito Shikano, 07.2010

Amber Teacher , amber.teacher@helsinki.fi

Conservation Genetics, Amber Teacher, 15.11.2010
Diseases of Aquatic Organisms, Amber Teacher, 25.08.2010
Heredity, Amber Teacher, 28.12.2010
Immunogenetics, Amber Teacher, 14.06.2010
Immunogenetics, Amber Teacher, 19.03.2010
Molecular Ecology, Amber Teacher, 13.10.2010
Molecular Ecology, Amber Teacher, 14.07.2010
PLoS One, Amber Teacher, 01.10.2010
PLoS One, Amber Teacher, 07.07.2010
PLoS One, Amber Teacher, 10.03.2010

Jacquelin De Faveri , jacquelin.defaveri@helsinki.fi

Molecular Ecology Resources, Jacquelin De Faveri, 2010

John Loehr , john.loehr@helsinki.fi

Peer review of African Journal of Food Science article, John Loehr, 07.08.2010

Tuomas Leinonen , tuomas.leinonen@helsinki.fi

Journal of Evolutionary Biology, Tuomas Leinonen, 2007
Oikos, Tuomas Leinonen, 2007
Biochemical Systematics, Tuomas Leinonen, 2008
Ecology, Tuomas Leinonen, 2008
Journal of Evolutionary Biology, Tuomas Leinonen, 2008
Molecular Ecology, Tuomas Leinonen, 2008
Oikos, Tuomas Leinonen, 2008

Menghua Li , menghua.li@helsinki.fi

Conservation Genetics, Menghua Li, 2008
Genetic Selection Evolution, Menghua Li, 2008
Journal of Animal Breeding and Genetics, Menghua Li, 2008
Journal of Heredity, Menghua Li, 2008
BMC Genomics, Menghua Li, 2009
Genetica, Menghua Li, 2009
Journal of Animal Breeding and Genetics, Menghua Li, 2009
Molecular Ecology, Menghua Li, 2009
BMC Genetics, Menghua Li, 2010
Biochemical Genetics, Menghua Li, 2010
Heredity, Menghua Li, 2010
Journal of Animal Breeding and Genetics, Menghua Li, 2010

Assessment of candidates for academic posts

Juha Merilä , Juha.Merila@helsinki.fi

Advisor in assistant professorship appointment, Juha Merilä, 2005, Sweden
Advisor in docentship nomination, Juha Merilä, 2005, Finland
Advisor in individual professorship appointment, Juha Merilä, 2005, Switzerland
Advisor in professorship appointment, Juha Merilä, 2005, Switzerland
Advisor in assistant professorship appointment, Juha Merilä, 2006, Sweden
Advisor in docentship nomination, Juha Merilä, 2006, Finland
Advisor in docentship nomination, Juha Merilä, 2007, Finland
Advisor in professorship appointment, Juha Merilä, 2007, Switzerland
Advisor in lecturer appointment, Juha Merilä, 2007, Denmark
Advisor in professorship appointment, Juha Merilä, 2007, Sweden
Advisor in E. W. R. Steacie Memorial Fellowship, Juha Merilä, 2008, Canada
Advisor in lecturer appointment, Juha Merilä, 2008, Denmark
Advisor in professorship appointment, Juha Merilä, 2008, Denmark
Advisor in docentship nomination, Juha Merilä, 2008, Finland
Advisor in docentship nomination, Juha Merilä, 2009, Finland
Advisor in professorship appointment, Juha Merilä, 2009, Finland
Advisor in professorship appointment, Juha Merilä, 2009, Cyprus
Advisor in University Research Fellowship, Juha Merilä, 23.12.2010, United Kingdom
Advisor in fellowship nomination for Australian Academy of Science, Juha Merilä, 19.12.2010, Australia
Advisor in professorship appointment, Juha Merilä, 14.12.2010, Cyprus

Membership or other role in review committee
Juha Merilä, Juha.Merila@helsinki.fi

Grant evaluation for Leverhulme Trust, Juha Merilä, 2007
Grant evaluation for Vetenskapsrådet, Juha Merilä, 01.01.2007 → 31.12.2007, Sweden
Naturvårdsverket, Juha Merilä, 2007
US-Israel Bi-national Foundation 2007 (Grant evaluations), Juha Merilä, 2007
ESF exchange visit grant evaluation, Juha Merilä, 2008
ESF exchange visit grant evaluation, Juha Merilä, 2008
ESF exchange visit grant evaluation, Juha Merilä, 2008
ESF exchange visit grant evaluation, Juha Merilä, 2008
ESF exchange visit grant evaluation, Juha Merilä, 2008
ESF exchange visit grant evaluation, Juha Merilä, 2008
ESF exchange visit grant evaluation, Juha Merilä, 2008
ESF exchange visit grant evaluation, Juha Merilä, 2008
Max Planck Society for the Advancement of the Sciences, Juha Merilä, 07.07.2008, Germany
National Science Foundation, Juha Merilä, 01.2008
Referee for Research Fellowship Application (Leverhulme Trust), Juha Merilä, 18.12.2008
The E.W. R. Steacie Memorial Fund, Juha Merilä, 15.09.2008, Canada
ESF exchange visit grant evaluation, Juha Merilä, 2009
ESF exchange visit grant evaluation, Juha Merilä, 2009
ESF exchange visit grant evaluation, Juha Merilä, 2009
ESF exchange visit grant evaluation, Juha Merilä, 2009
EGRU/Merilä

AXA Research Fund, Juha Merilä, 20.06.2010
ESF exchange visit grant evaluation, Juha Merilä, 2010
ESF exchange visit grant evaluation, Juha Merilä, 2010
ESF exchange visit grant evaluation, Juha Merilä, 2010
German Research Foundation, Juha Merilä, 18.03.2010, Germany
Swedish Research Council, Juha Merilä, 06.04.2010, Sweden
Swiss National Science Foundation (SNSF), Juha Merilä, 09.11.2010, Switzerland
Anna Kuparinen, Anna.Kuparinen@helsinki.fi
Evaluator for Icelandic Research Funds, Anna Kuparinen, 2009
Gabor Herczeg, gabor.herczeg@helsinki.fi
Member of European Science Foundation’s ‘pool of reviewers’, Gabor Herczeg, 2009 → ...

Membership or other role in research network
Juha Merilä, Juha.Merila@helsinki.fi
Contact person for ESF’s LESC-committee, Juha Merilä, 2009 → ...
Anna Kuparinen, Anna.Kuparinen@helsinki.fi
Invited workshop participation, Anna Kuparinen, 14.04.2009 → 18.04.2009, Germany
Kuluttu workshop osallistuminen, Anna Kuparinen, 27.09.2010 → 01.10.2010, France

Membership or other role in national/international committee, council, board
Juha Merilä, Juha.Merila@helsinki.fi
Coordinator of Nordic Network (NorFA) in Environmental Stress Research, Juha Merilä, 2005
Council member, Finnish Biologist Association Vanamo, Juha Merilä, 2005, Finland
ESF-programme: Integrating population genetics and conservation biology: Merging theoretical, experimental and applied aspects, Juha Merilä, 2005
IUBS Council of Finland, Juha Merilä, 2005
Member of the Finnish LTER planning group, Juha Merilä, 2005, Finland
Member of the Graduate School LUOVA, Juha Merilä, 2005, Finland
Member of the Graduate School in Evolutionary Ecology, Juha Merilä, 2005, Finland
Member of the leading group of the Graduate School in Population Genetics, Juha Merilä, 2005, Finland
Coordinator of Nordic Network (NorFA) in Environmental Stress Research, Juha Merilä, 2006
Council member, Finnish Biologist Association Vanamo, Juha Merilä, 2006, Finland
ESF programme: Thermal adaptation in ectotherms: Linking life history, physiology, behaviour and genetics, Juha Merilä, 2006
ESF-programme: Integrating population genetics and conservation biology: Merging theoretical, experimental and applied aspects, Juha Merilä, 2006
IUBS Council of Finland, Juha Merilä, 2006
Member of the Graduate School in Evolutionary Ecology, Juha Merilä, 2006, Finland
Member of the leading group of the Graduate School in Population Genetics, Juha Merilä, 2006, Finland
ESF programme: Thermal adaptation in ectotherms: Linking life history, physiology, behaviour and genetics, Juha Merilä, 2007
ESF-programme: Integrating population genetics and conservation biology: Merging theoretical, experimental and applied aspects, Juha Merilä, 2007
IUBS Council of Finland, Juha Merilä, 2007
Member of the Graduate School in Evolutionary Ecology, Juha Merilä, 2007, Finland
Member of the leading group of the Graduate School in Population Genetics, Juha Merilä, 2007, Finland
**EGRU/Merilä**

ESF programme: Thermal adaptation in ectotherms: Linking life history, physiology, behaviour and genetics, Juha Merilä, 2008

ESF-programme: Integrating population genetics and conservation biology: Merging theoretical, experimental and applied aspects, Juha Merilä, 2008

IUBS Council of Finland, Juha Merilä, 2008

Member of the Graduate School in Evolutionary Ecology, Juha Merilä, 2008, Finland

Member of the leading group of the Graduate School in Population Genetics, Juha Merilä, 2008, Finland

ESF programme: Thermal adaptation in ectotherms: Linking life history, physiology, behaviour and genetics, Juha Merilä, 2009

ESF-programme: Integrating population genetics and conservation biology: Merging theoretical, experimental and applied aspects, Juha Merilä, 2009

IUBS Council of Finland, Juha Merilä, 2009

Member of the Graduate School in Evolutionary Ecology, Juha Merilä, 2009, Finland

Member of the leading group of the Graduate School in Population Genetics, Juha Merilä, 2009, Finland

International Conference on Quantitative Genetics, Juha Merilä, 2010 – 2012

Member of the Graduate School in Evolutionary Ecology, Juha Merilä, 2010, Finland

Member of the leading group of the Graduate School in Population Genetics, Juha Merilä, 2010, Finland

**Anna Kuparinen**, Anna.Kuparinen@helsinki.fi

Member of scientific committee of the 4th European Symposium on Aerobiology, Anna Kuparinen, 2008

**José Manuel Cano Arias**, jose.canoarias@helsinki.fi

British Ecological Society, José Manuel Cano Arias, 01.01.2005 – 31.12.2005, United Kingdom

European Society of Evolutionary Biology, José Manuel Cano Arias, 01.01.2005 – 31.12.2005

British Ecological Society, José Manuel Cano Arias, 01.01.2006 – 31.12.2006

European Society of Evolutionary Biology, José Manuel Cano Arias, 01.01.2006 – 31.12.2006

British Ecological Society, José Manuel Cano Arias, 01.01.2007 – 31.12.2007, United Kingdom

**Gabor Herczeg**, gabor.herczeg@helsinki.fi

Steering Committee Member in an ESF programme, Gabor Herczeg, 2006 – …

**Menghua Li**, menghua.li@helsinki.fi

The International Society for Animal Genetics, Menghua Li, 2008 – …

The Society of Conservation Biology, Menghua Li, 2008 – …

**Membership or other role in public Finnish or international organization**

**Juha Merilä**, Juha.Merila@helsinki.fi

Chairman of the Biological Stations of University of Helsinki, Juha Merilä, 2006, Finland

Member of the Vikki Science Library board, Juha Merilä, 2005, Finland

Member of the faculty board (Faculty of Biosciences, University of Helsinki), Juha Merilä, 2005, Finland

Chairman of the Biological Stations of University of Helsinki, Juha Merilä, 2006, Finland


Member of the Vikki Science Library board, Juha Merilä, 2006, Finland

Member of the faculty board (Faculty of Biosciences, University of Helsinki), Juha Merilä, 2006, Finland

Chair for the Baltic Sea - seminar at the Academy of Finland, Juha Merilä, 04.11.2008, Finland

**Membership or other role of body in private company/organisation**
Juha Merilä, Juha.Merila@helsinki.fi
Chair of the Finnish Lesser White-fronted Goose conservation group, Juha Merilä, 2005, Finland
Council member, Finnish Ornithological Society, Juha Merilä, 2005, Finland
Chair of the Finnish Lesser White-fronted Goose conservation group, Juha Merilä, 2006, Finland
Chair of the Finnish Lesser White-fronted Goose conservation group, Juha Merilä, 2009, Finland
Chair of the Finnish Lesser White-fronted Goose conservation group, Juha Merilä, 2010, Finland

Theresa Knopp, theresa.knopp@helsinki.fi
Participation in interview for written media
Juha Merilä, Juha.Merila@helsinki.fi
Comment in Tiede magazine, Juha Merilä, 27.04.2006, Finland
Letter to Helsingin Sanomat newspaper, Juha Merilä, 01.05.2007, Finland
Letter to Helsingin Sanomat newspaper, Juha Merilä, 11.10.2007, Finland
Letter to Suomen Kuvalehti magazine 29/2007, Juha Merilä, 01.01.2007, Finland
Turun Sanomat, Juha Merilä, 01.01.2007, Finland
Interview in Helsingin Sanomat, Juha Merilä, 03.06.2008, Finland
Interview in Helsingin Sanomat newspaper, Juha Merilä, 29.04.2008, Finland
Interview in Keskipohjanmaan newspaper, Juha Merilä, 31.05.2008, Finland
Interview in Tiede magazine, Juha Merilä, 01.08.2008, Finland
Interview in Yliopisto magazine, Juha Merilä, 12.2008, Finland
Interview in Yliopisto magazine, Juha Merilä, 08.2008, Finland
Interview on Suomen Luonto, Juha Merilä, 04.2009, Finland
Interview in Yliopisto magazine, Juha Merilä, 08.2009, Finland
Interview in Yliopisto magazine, Juha Merilä, 04.2009, Finland
Interview in Helsingin Sanomat newspaper, Juha Merilä, 06.08.2010, Finland
Interview in Kaleva newspaper, Juha Merilä, 18.05.2010, Finland
Interview in Yliopisto magazine, Juha Merilä, 08.2010, Finland

Gabor Herczeg, gabor.herczeg@helsinki.fi
Helsingin Sanomat 17.6.2008, Gabor Herczeg, 2008

Kim Jaatinen, kim.jaatinen@helsinki.fi
Interview in Helsingin Sanomat newspaper, Kim Jaatinen, 17.06.2008, Finland

Theresa Knopp, theresa.knopp@helsinki.fi
Vikki päivä, öppna dörrars dag i Viik biocenter, Theresa Knopp, 11.10.2004 → 31.12.2011, United Kingdom
Interview in Yliopisto magazine, Theresa Knopp, 12.2008, Finland

Henna Emilia Piha
Comment in Tiede magazine, Henna Emilia Piha, 27.04.2006, Finland

Participation in radio programme
Haastattelu Luontorett -ohjelmaan, Kaisa Susanna Välimäki, 06.05.2007

Participation in interview for web based media
Juha Merilä , Juha.Merila@helsinki.fi
Interview in Yale environment 360, Juha Merilä, 03.08.2009, United States
Research Group: Merilä J

**Basic statistics**
- Number of publications (P) 172
- Number of citations (TCS) 1,286
- Number of citations per publication (MCS) 7.64
- Percentage of uncited publications 22%
- Field-normalized number of citations per publication (MNCS) 1.64
- Field-normalized average journal impact (MNJS) 1.28
- Field-normalized proportion highly cited publications (top 10%) 1.77
- Internal coverage .78

**Trend analyses**

**Collaboration**

**Performance (MNCS) by collaboration type**
INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING
AT THE UNIVERSITY OF HELSINKI

by CWTS, Leiden University, the Netherlands

Research profile