



Les partenaires du réseau d'excellence Evoltree

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- P3 – ARC Seibersdorf Research GMBH (ARCS)
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Individual descriptions

P1 – Institut national de la recherche agronomique (INRA)

Six different research units of INRA representing 36 researchers are contributing to Evoltree. As a whole, these units are conducting research on terrestrial biodiversity in temperate and Mediterranean ecosystems with expertise in population and molecular genetics of trees, insects and mycorrhizal fungi, ecophysiology, ecology and evolution. INRA is also the coordination partner and will therefore be strongly involved in the overall management of the activities

Six different units involving in the NoE:

- UMR Biogeco (Joint Research Unit INRA-University of Bordeaux I) Bordeaux
- URFM – Avignon
- UMR EEF (Joint Research Unit INRA-University Nancy I) – Nancy
- UAGPF – Orléans
- UMR GV (Joint Research Unit INRA-CNRS-University Evry) – Evry
- UMR IAM (Joint Research Unit INRA-University Nancy I) - Nancy

The key persons involving in the NoE are:

UMR Biogeco

Antoine Kremer has strong expertise in population and quantitative genetics with particular emphasis on temperate and tropical trees. He coordinated EU supported projects in FP3, FP4 and FP5 and is associate editor of two international journals (Conservation genetics, Tree Genetics & Genomes). He has record of 150 publications in top ranking journals and is coordinating Evoltree.

The other key persons involving in Evoltree are **Rémy Petit, Christophe Plomion, Hervé Jactel**.

URFM

François Lefèvre has strong expertise in population and quantitative genetics, associate editor of the Canadian Journal of Forest Research. He is deeply involved in gene resource conservation projects (task leader in FP4-EUROPOP project, chair of the Euforgen Populus nigra Network for 6 years, French representative in the Eufogren Steering Committee from 2005).

The other key person involving in Evoltree is **Philippe Dreyfus**.

UMR EEF

Erwin Dreyer is a tree ecophysiologicalist with a research interest in the assessment of intra and interspecific diversity in traits related to water use and carbon assimilation among temperate, Mediterranean and tropical trees. He is principal coordinator of the French Network on Tree Ecophysiology at INRA and of a Marie Curie training centre at Nancy. He is associate Editor for Journal of Experimental Botany and for Annals of Forest Science.

The other key persons involving in Evoltree are **Yves Jolivet, Oliver Brendel** and **Didier Le Thiec**.

UAGPF

Catherine Bastien is involved as forest geneticist in management of genetic variation of Scots pine natural resources for adaptive traits. For five years, she is developing research on the genetic basis of variation observed in different Populus species for phenology, growth pattern, and pest tolerance. She is task leader in the presently running EU- FP5 Popyomics project.

The other key persons involving in Evoltree are **Brigitte Musch**, and **Gilles Pilate**.

UMR GV

Patricia Faivre Rampant has 12 years experience in molecular biology and genetics in forest species. She is involved in genetic mapping and QTL detection in poplar and coniferous species. She recently moved to UMRGV with the objective to develop a physical structural genomic in poplar and map based cloning.

The other key person involving in Evoltree is **Boulos Chaloub**.

UMR IAM

Francis Martin has strong interests in genomics of trees and associated symbiotic (mycorrhizal) and pathogenic fungi. His current research interests include: a) elucidating the molecular interactions between trees, ectomycorrhizal fungi and rhizospheric bacteria, b) understanding the physiological mechanisms that allow the integration of symbiosis in the biology of the tree and the mycobiont, and c)

developing eco-genomics for understanding the role of fungal and bacterial communities in nutrient cycling in forest ecosystems.

The other key persons involving in Evoltree are **Michel Chalot**, and **Jean-Pierre Jacquot**.

P2 – Alterra B.V (Alterra)

ALTERRA is part of Wageningen University and Research (The Netherlands) and represents within Evoltree also three other institutes from this organisation. Together the competences of the researchers range from the molecular gene- to the ecosystem level and nicely complement each other.

ALTERRA is concerned with the ecology and genetics of the natural environment (population and quantitative genetics, population genomics, ecosystem modelling, forest ecology, conservation of tree genetic resources and tree breeding).

PRI – PPO (Plant Research International – Applied Research Plant and Environment) is concerned with the development and application of genetics and genomics to all aspects of plant breeding, cultivation, and conservation (genomics, plant breeding, phytopathology, conservation of genetic resources, mycology, and QTL mapping).

AFI (Agro Food Innovations) is involved with applying genomics to food and agro-technical purposes (Identification of genes and molecular pathways, application of cDNA micro-arrays, and abiotic stress response).

The key persons involving in the NoE are:

Dr Hans Peter Koelewijn (ALTERRA) was trained as a plant ecologist, but switched thereafter to population genetics (plants, animals and protists; mendelian, quantitative and molecular genetics). Main fields of expertise: the genetics of plant sexual systems, spatial genetic structure of populations, and plant dispersal.

Dr Koen Kramer (ALTERRA) has been working for ten years in the field of modelling the impact of climate change, disturbances and management on the diversity and structure of European Forests.

Dr René Smulders (PRI) has been working for ten years as a Molecular Geneticist in the field of genetic diversity of natural populations, and the application of molecular genetics to identify species and populations.

Dr Monique van Wordragen (AFI) has a 15 years experience plant molecular biology. She is Program Co-ordinator for Applied Plant Genomics within the Business Unit Quality in Chains of AFI. In this programme molecular biology is applied for unravelling plant responses to abiotic stress and for the development of molecular diagnostics for monitoring and predicting post-harvest quality.

P3 – ARC Seibersdorf Research GMBH (ARCS)

Competences include physiologic and genetic analyses of stress response of the plants to biotic and abiotic environmental factors as well as microbial population diversity. Plant stress sensitivity/tolerance is investigated by molecular techniques such as suppression subtractive hybridisation or microarray technique. Further more we have considerable experience in developing molecular genetic marker systems both for analysing the genetic diversity of populations and for discriminating alleles of various genes. Additionally an EST clone repository for the large-scale storage of cDNA clones of various plant species is available in order to maintain and conserves DNA-fragments. Data management and integration of distributed data sets is an additional competence available at the ARC-sr. The competences of microbial population analysis, plant physiology, bioinformatics and molecular biology are available within the department of Biogenetics/Natural resources of the ARC-sr.

The key persons involving in the NoE are:

Kornel Burg (PhD) is molecular geneticist by training. His main interest during the last years was marker development and application for population genetics, as well as analysis of functional diversity in forest trees.

Silvia Fluch (MSc) has over 12 years of experience in molecular biology and population genetics. Focus on expression profiling using microarrays, is responsible for building a repository centre for plant genetic resources (<http://www.picme.at>).

Dieter Kopecky (MSc) computer scientist with 6 years experience in database system technology and bioinformatics. Focus during last years was design and implementation of a data warehouse for plant genomic resources.

P4 – Bundesforschungsanstalt für Forst und Holzwirtschaft (BFAFH)

The Institute carries out research on genetics of indigenous and exotic tree and shrub species as well as on associated insects and fungi. Focal points of the research are (a) genome research, (b) ecological genetics, (c) resistance research and (d) provenance research and tree breeding methods. The international scientific journal of forest genetics "SILVAE GENETICA", is edited at the institute.

The key persons involving in the NoE are:

Bernd Degen (Ph.D., habil.) is director of the Institute and has 12 years experience in forest genetics with focus on population genetic, modelling and data analysis in temperate and tropical forest. He has 5 years experience as head of molecular lab in the tropical South-America. He participated and partly co-ordinated 9 international research projects. He is also the national co-ordinator of Germany for EUFORGEN. He has participated at more than 25 reviewed publications in scientific journals, and editor in Chief of the international journal *Silvae Genetica*.

Matthias Fladung (Ph.D., habil.) has over 20 years experience in plant physiology, including 15 years in molecular genetics and gene transfer methods. He has now also 11 years experience in forest genetics. He is or was involved in more than 10 national and international projects, in part as project leader or project coordinator, and was responsible for two field trials with genetically modified trees in Germany. His publication list contains more than 50 reviewed publications in scientific journals. Outstanding papers have been published in *Nature*, *Trends in Plant Science*, and *Plant Journal*.

Thorsten Markussen (Ph.D.) studied genetics, botany and microbiology. He has 13 years experience in molecular genetics of woody plants. His work is focussed on resistance research, development of molecular markers, and construction of genetic maps, forensic botany and identification of seed origins. He was involved in two European projects. He is co-project leader for genetically modified trees at the institute. His publication list contains more than ten reviewed publications in scientific journals.

Hilke Schröder (Ph.D.) studied biology with focal points in molecular biology and zoology and has 10 years experience in ecological and molecular entomology. Her main expertise involved ecological and population genetics. She is working on plant-insect interactions and her main interests are population genetics and dispersal of parasites of forest trees at different scales and the association to the hosts.

P5 –Consiglio Nazionale delle Ricerche (CNR-IVG)

The group is experienced in population genetics, genomics, in conservation genetics of forest species, in molecular marker development and analysis for describing reproductive processes, geographic variation, spatial genetic structure, and for understanding migration history in the post-glacial period. In addition the group has experience in QTL mapping. Some of the participants are involved in plant physiology and studies concerning plant adaptability to environmental constraints and the effect of photosynthetic limitations under environmental conditions reducing plant productivity, such as drought and high salinity. Experience in data analysis and handling (GIS) and data base construction. Two different units involve in the NoE: CNR Firenze (P5a) and CNR Porano (P5b)

The key persons involving in the NoE are:

G.G. Vendramin is responsible of the CNR unit and has experience in molecular population and conservation genetics of forest trees. In particular, he is interested in range-wide phylogeography and fine-scale population gene dynamic and has a long experience in all relevant lab techniques and data analysis. He has been scientific responsible for EU funded projects, with extensive research and publishing experience in scientific networks (more than 100 publications in over 25 different international journals).

Gabriele Bucci is experienced in molecular and statistical genetics, forest population genetics, ranging from genome structure and organisation by linkage analysis to spatial genetic structure of populations and reconstruction of post-glacial pathways of decolonization. He has experience in data analysis and handling (GIS).

Fiorella Villani has an expertise on population genetics, gene conservation, evolutionary and ecological genetics. The main focus of her research has been the evaluation of genetic diversity, gene flow, introgression, QTL mapping in chestnut. Genetic characterization of *Abies* sp and *Nothofagus* sp. Coordinator of EU project (CASCADE), and scientific responsible of EU projects.

Francesco Loreto is ecophysiologicalist with large experience in studying the interactions between biosphere and atmosphere. Currently coordinator of the EU Marie Curie Network "Ecological and

physiological functions of biogenic isoprenoids and their impact on the environment” (ISONET)” and the ESF programme “Volatile Organic Compounds in the Biosphere-Atmosphere System (VOCBAS)”.

P6 – Vlaams Interuniversitair Instituut Voor Biotechnologie VZW (VIB)

The Tree Biotechnology Team of VIB-PSB has expertise in state-of-the-art molecular biology of forest trees, transformation of poplar, transcript and metabolite profiling, genetic mapping of poplar and reversed genetics of Arabidopsis. Projects focus on wood formation, seasonal growth and yield. The Bioinformatics and Evolutionary Genomics Team has strong experience in *in silico* genome analysis. Its work is dedicated to gene finding and mining, genome annotation, gene family clustering, non-coding RNA genes, and promoter *cis*-regulatory modules. The team is the only non-US team involved in gene annotation of the poplar genome and established a unique and recognized expertise in evolutionary analysis of genome and gene sequences and functions. Two groups of the department of VIB-PSB will be involved in the network: the tree biotechnology group headed by Pr Wout Boerjan and the Bioinformatics & Evolutionary Genomics Team co-headed by Pr Yves Van de Peer and Dr Pierre Rouzé.

The key persons involving in the NoE are:

Wout Boerjan has received his PhD in 1993 and is heading the Tree biotechnology group since 1994. Over 60 publications in the field of tree biotechnology, particularly on lignin biosynthesis and tree genetics, document his expertise in this field. He and his group have participated in many EU-funded projects on lignin modification, biodiversity, and tree genetics.

Pierre Rouzé is an INRA Research Director and has a background in plant physiology and genetics. He has launched in 1994 the now outstanding bioinformatics unit of the VIB. Since 2002, he co-leads the Bioinformatics and Evolutionary Genomics Team together with Yves Van de Peer. He has particular expertise in genome annotation, gene discovery and promoter analysis.

Antje Rohde has received her PhD in 1998, and has 14 years of research experience in tree physiology and tree molecular genetics. Her main expertise is in adaptive traits, such as bud development and dormancy in poplar.

P7 – Danmarks Og Groenlands Geologiske Undersoegelse (GEUS)

The Environmental History Research Group (EHRG) researches long-term variation in terrestrial and marine environments and their relationship to climatic change. The focus for EVOLTREE is palaeovegetation studies and land-use reconstruction

The key persons involving in the NoE are:

Richard Bradshaw is Professor in Palaeoecology. He will work with modelling of past climate-vegetation relationships and studies of the post-glacial spread of trees.

Eske Willerslev is Professor of ancient DNA. He will supervise aDNA analysis of European fossil tree remains. The goal is to characterise genetic development during tree spreading since the last ice age.

P8 – Georg-August-Universitaet Goettingen Stiftung Oeffentlichen Rechts (UGOE)

UGOE has competences in population genetics of trees (mating system, gene flow, spatial and temporal variation) and adaptation at the molecular level, QTL analysis, genetic implications of forest management, and also further competences in tree physiology, characterisation of stress response, analysis of mycorrhizae, transcriptional profiling and proteome analysis, chemical ecology of plant-fungus-insect interactions. Three institutes of UGOE are involved in EVOLTREE: Institute of Forest Genetics and Forest Tree Breeding, Institute of Forest Botany (Dept. Tree Physiology and Dept. Molecular Wood Biotechnology), Institut of Forest Zoology and Forest Conservation

The key persons involving in the NoE are:

Pr Dr R. Finkeldey is Dean of Faculty of Forest Sciences and Forest Ecology (since 2006) and chair for Forest Genetics and Forest Tree Breeding, Göttingen University (since 2001). He holds diplomas in Forestry of the Temperate Region and Tropical Forestry (1988), Dr forest (1992), Habilitation (2000). Long-term research assignments in Southeast-Asia (1993-1997) and Switzerland (1997-2001).

Pr Dr U. Kües is Chair in Molecular Wood Biotechnology since 2001 at Göttingen University. He holds a PhD in Biology in Berlin and he has done a Postdoc in Oxford (UK; 1991-1994). He is group leader in Zürich (Switzerland; 1999-2001; Habilitation 1999). He works at the Editorial Board of Applied Microbiology and Current Genetics.

Pr Dr A. Polle is Chair for Tree Physiology at the Forest Botanical Institut at the University Göttingen. He hold a PhD in Biophysics (1986), Habilitation in Ecophysiology (1995). He is member of Scientific advisory boards (Trees, Oecologia, Plant Cell and Environment), and is referee for funding agencies (NERC, EU, NSF, DFG, etc) and scientific journals.

Pr Dr S. Schütz is Director of the Institute of Forest Zoology and Forest Conservation at Göttingen University since 2002. He hold diplomas in Chemistry (1988), Diploma Biology (1990), Dr rer. nat. in Chemistry (1991), Habilitation (2000), Fachbereich Agrarwissenschaften. He was Professor for Chemoecology in Ulm (2001). He is Associate Editor of Journal of Applied Entomology.

P9 – INRA Transfert (IT)

INRA Transfert is a project management consulting company specialized in the field of innovating technologies arising from agriculture-related research. INRA Transfert's team manages the technology portfolio of INRA (French National Institute in Agronomic Research) and supports development of innovative start-up companies. Through its "European projects" activity, INRA Transfert assists the key players in Research and Innovation in setting up and managing their european research projects and networks.

The key persons involving in the NoE are:

Dr Diep Tuong Bao, PhD in Mechanics, MBA, is the manager of the IT's Europe Department. Dr Diep has a long experience in building up and managing European research and development programmes funded by the 5th and 6th Framework Programmes. Before supporting organisations in setting up and running collaborative R&D projects, Dr Diep spent the first part of his career in fluid mechanics where he studied multiphase flows. He then turned into structural mechanics where he specialized in automotive passive safety, more particular, in crash simulations.

Luc Ozanne holds a Master of Science in Agronomy. He started his professional career as assistant coordinator of a FP5 project. He turned then to international market analysis and afterwards moved to Inra Transfert, and participated to the setting up of various FP6 proposals.

Cécile Etienne holds the Master of Science in Biology of the University of Montreal and started her professional carrier as a research assistant. She then turned into project management with a Master in Business Administration of the University of Lyon Business and Management School and started the second part of her career at INRA Transfert as European Project Manager.

P10 – International Plant Genetic Resources Institute (IPGRI)

IPGRI is an international organization with global mandate to advance the conservation and sustainable use of biological diversity for well being of people. Regional networking has been a principal tool for facilitating collaborative activities on forest genetic resources. IPGRI coordinates the European Forest Genetic Resources Programme (EUFORGEN) and is actively involved in the pan-European forest policy process (MCPFE). The Institute has recognized competences in research and knowledge management, documentation and genetic resources policy. It has a record of facilitating integration and dissemination of information outputs developed within EU research projects.

The key persons involving in the NoE are:

Jozef Turok is Regional Director for Europe since 2000, and responsible for development and implementation of strategies for programme delivery in the area of plant genetic resources in Europe. Previously he was EUFORGEN Coordinator for eight years. He has background in forest genetics, PhD from Georg-August-University of Göttingen, Germany. He is also member of editorial board of the International Forestry Review.

Jarkko Koskela is Scientist and EUFORGEN Coordinator since 2003. Previously he was based in Malaysia and he was responsible for developing the Asia Pacific Forest Genetic Resources Programme (APFORGEN). He obtained PhD from the University of Helsinki, Finland and his professional experience and interests include biodiversity conservation, sustainable forest management and research on the effects of climate change on forests.

Barbara Vinceti is Associate Scientist, and expert on forest biodiversity assessments. She holds a PhD from the University of Edinburgh, UK. Since 2002 she is responsible for coordinating and supporting research activities on forest genetic resources conservation and sustainable use, within the framework of IPGRI's global project on forest genetic resources. She has field experience in developing countries, mostly in Latin America..

P11 – Natural Environment Research Council (CNR)

The CNR Centre for Ecology & Hydrology (CEH) is the UK's Centre of Excellence for research in the terrestrial and freshwater environmental sciences. Five of CEH's sites will take part, combining expertise in field ecological investigation and genomics, transcriptomics and proteomics of trees, insects, and soil fungi, together with gridded bioinformatics, genomic database, modelling and analytical tools. Five different units of CEH involved in the NoE: CEH-Oxford, CEH-Dorset, CEH-Lancaster, CEH-Edinburgh, and CEH-Banchory.

The key persons involved in the NoE are:

CEH-Oxford

Dr Dawn Field leads the Molecular Evolution and Bioinformatics Group. She applies molecular evolutionary theory and computational biology to ask questions about how sequences evolve at the DNA-level. In particular, she is interested in exploiting collections of complete genome sequences to detect biological patterns that explain how genotype leads to phenotype. Her group is building biologist-friendly tools that promote the testing of biological hypotheses using in silico approaches.

CEH-Edinburgh

Dr Julia Wilson leads the Biosystems Management Section. She is a physiologist by training and is particularly interested in the below-ground interactions between trees and crops. This includes studies of root architecture and function, plant water relations and mycorrhizal fungi. She is currently involved in a number of EU projects under the INCO-DEV programme. .

Dr Stephen Cavers is involved in a number of EU projects examining genetic diversity and population structure in tropical and temperate tree species. These encompass both range-wide and plot level studies.

Kevin Ingleby is a mycologist with wide-ranging interests in mycorrhizal fungi - arbuscular, ectomycorrhizal and ericoid. Recently, he has been studying the spread of arbuscular fungi between trees and annual plants and the potential of trees to be reservoirs of mycorrhizal fungi.

CEH-Dorset

Dr James Bullock is head of the Conservation Biology Section. He is interested in quantifying seed dispersal, as it is such a vital stage in a plant's life cycle, being the only time at which plants can move any appreciable distance.

CEH-Lancaster

Dr Janette Whitaker is interested in mycorrhizal fungi with particular reference to degraded sites.CEH-Banchory

Dr Allan Watt is Head of CEH Banchory and deputy Director of the Biodiversity Programme of CEH. He leads the BioAssess project, developing tools for assessing biodiversity and quantifying the impact of land use change on biodiversity, and the BIOFORUM project. He is also currently involved in LACOPE (impact of grazing systems on biodiversity), MARBENA (marine biodiversity) and BIOplatform (a platform for scientists and policy-makers). He has a research interest in the population dynamics of forest pests and is senior editor of Agricultural and Forest Entomology.

P12 – Phillips Universität Marburg (UNI MAR)

The involved persons belong to the Faculty of Biology and represent the Sections of Ecology, Nature Conservation and Mycology. They have a long tradition in population genetics and ecological genetics of plants (trees, shrubs, herbaceous plants), insects and mycorrhiza. The work spans from analysing macroecological and phylogeographical patterns to analysing the results from experimental set-ups (common garden and reciprocal transplant experiments). Moreover, the groups have expertises in molecular marker technologies and computer modelling.

The key persons involving in the NoE are:

Birgit Ziegenhagen is a population geneticist and since 2002 full professor at the Philipps-University of Marburg, Faculty of Biology, Working Group of Conservation Biology. She has participated in national and EU projects on tree biodiversity from range wide to within-population studies. She is member of the editorial board of "Forest Genetics" and of a scientific council of a National Forest Research Programme.

Roland Brandl is an ecologist and since 2001 full professor of animal ecology at the Philipps-University of Marburg. He has participated in special programs of the German science foundation as well as the German government: genetic analyses of social systems; analysis of biological radiations;

BIOTA (biodiversity in Africa); BIOTEAM (invasion biology); biodiversity in the Atlantic forests of Brazil. He is Editor-in-chief of "Oecologia" (responsible for all zoological manuscripts from outside the Americas) and one of the editors of "Basic and Applied Ecology".

Diethart Matthies is a plant ecologist and since 1999 full professor of plant ecology at the Philipps-University of Marburg. He has participated in national and EU-projects on the effects of habitat fragmentation on demographic and genetic processes in plants. He is also Editor-in-chief of "Perspectives in Plant Ecology, Systematics and Evolution", and member of the editorial board of "Oecologia" and "Basic and Applied Ecology".

Gerhard Kost is a mycologist and since 1993 full professor at the Philipps-University of Marburg, Faculty of Biology, Section Mycology & Systematic of Lower Plants. He has participated in national and international projects on biodiversity and interactions of fungi in tropical and temperate ecosystems. He is member of the editorial board of "Mycological Progress" and "Ecotropica".

P13 – Eidgenoessische Forschungsanstalt WSL (WSL)

WSL has a long-standing expertise in research on biodiversity at all levels, from ecosystems to genes. Descriptive and experimental approaches complement the study of neutral and adaptive genes in terrestrial ecosystems. Likewise, long-term monitoring of environmental changes and their effects on forest ecosystems and processes combines with modelling scenarios of community changes. Study organisms include all trophic levels in forest species (plants, herbivores, mycorrhizal and pathogenic fungi, and insects).

The key persons involving in the NoE are:

Dr Felix Gugerli centers his research on using neutral molecular markers for elucidating population processes in space and time. Trees and other forest species serve as model organisms. Current activities are directed towards the analysis of multi-species genetic and taxonomic diversities in relation to environmental variation.

Dr Martina Peter has expertise in the molecular ecology and biology of ectomycorrhizal fungi (ECM). A major topic in her research is to study the ECM community structure in forest ecosystems in changing environments. She is interested in the functional significance of the inter- and intraspecific diversity of ECM for tree hosts using transcriptomic approaches in the field.

Dr Norbert Kräuchi is program manager of the Swiss Long-term Forest Ecosystem Research Network, which contributes to ICP Forests. His research addresses global change impacts on mountain environments and the effect of air quality (e.g., ozone) on forest ecosystems.

Christoph Sperisen applies genetic and genomic approaches to studying evolutionary processes in trees. He participated in several EU projects in which he mainly analysed population genetic processes. His current research focuses on the identification of genes involved in the response of trees to environmental change.

P14 – Technicka Univerzita Vo Zvolene (TUZVO)

TUZVO participates to Evoltree through the Department of Phytology of the Faculty of Forestry. Focal points of the research are (a) population genetics of forest trees, (b) phylogeny and phylogeography of forest tree species, (c) reproduction biology, gene flow and mating system. The Department takes care of the education of forest genetics both for undergraduate and graduate programs (including PhD program in forest genetics). The international scientific journal *Forest Genetics* is edited at the Department.

The key persons involving in the NoE are:

Dr Ladislav Paule, professor of forest genetics and tree breeding since 1991. Main research activity has been focused at the population and evolutionary genetics, gene flow and mating system in tree populations. He was the coordinator of the Slovak team in the EU projects Fraxigen and Fossilva. He is Editor-in-Chief of the journal *Forest Genetics*.

Dr Dušan Gömöry is associate professor of forest genetics and tree breeding since 1998. Main research activity has been focused at the population and evolutionary genetics, gene flow and mating system in tree populations. He has participated in the EU projects Fraxigen and Fossilva (coordinator of the Slovak team). He is Assistant Editor of the journal *Forest Genetics*.

Dr, Jaroslav Ďurkovič is molecular geneticists. In the past he has worked mostly in the field of *in-vitro* propagation, at present head of the DNA-unit. He has participated in the EU projects Fraxigen (gene diversity and phylogeography).

P15 – Technische Universität München (TUM)

The section of Forest Genetics holds expertise in the discovery of genes and proteins; cDNAs, subtractive cDNAs, protein 2D-PAGE, marker development, genotyping (ESTs, AFLPs, SSRs, isoenzymes). The Chair of Animal Ecology holds expertise in laboratory culture and bioassay techniques for bark beetles; nutritional quality; digestion, and genotyping. The National Research Centre for Environment and Health, Institute of Soil Ecology has expertise in soil ecology, biochemical/immunological characterization of mycorrhizal enzymes, *in situ* measurements of enzyme activities, and identification of microorganisms. The National Research Centre for Environment and Health, Institute of Biochemical Plant Pathology has expertise in establishment of cDNAs and subtractive cDNAs; expression profiling, DNA microarrays; RT-PCR, high sensitive QPCR; fungal inoculation

The key persons involving in the NoE are:

Pr Dr Gerhard Müller-Starck has a long term experience in genetic analyses and linkage studies. He is studying the verification of dynamics of genetic variation in tree populations including Alpine environments, responses to various stresses; biomonitoring; study of correlations between genetic markers and phenotypic traits. He is coordinator of the EU project "BAFE" (CT96-1949), Officeholder IUFRO 7.04.00 (Impacts of air pollution & climate change). He works at the Editorial Board *Silvae Genetica*, Forest Genetics.

Pr Dr Reinhard Schopf studies the plant (conifer)-herbivore interactions. He has a long experience in bark beetle biology and in bioassays (cage experiments with bark beetles, GC analysis of monoterpenes and bark beetle pheromones, HPLC analysis of phenolic plant constituents. He works as Editor in Chief of "Journal of Applied Entomology".

Pr Dr Jean Charles Munch has a long term experience in functional microbial diversity in agricultural and forest soils as well as contaminated sites, soil carbon and nitrogen turnover, conservation of agro- and forestry ecosystems also at the landscape level, biodegradation of organic chlorinated compounds, processes in anaerobic microsites, risk assessment by use of genetic engineered organisms.

Dr habil. Dieter Ernst studies transcriptional recording of plant stress networks after abiotic/biotic stress. Using DNA microarrays and RT-PCR a transcriptional interplay, differences as well as interactions will be analysed. Promoter analyses will result in the elucidation of signal transduction components, and the functional assignment of an expression profile will contribute to a better understanding of plant stress responses.

P16 – Instituto Nacional de Investigacion y Tecnologia Agraria y Alimentaria (INIA)

The INIA represents themselves, the NEIKER-Instituto Vasco de Investigación y Desarrollo Agrario and the Universidad Politécnica de Madrid, Escuela Técnica Superior de Ingenieros de Montes. The partner is composed of three different organisations that have been collaborating for the last years in the fields of tree-genomics, population genetics of Mediterranean species (especially Pines, Oaks, Poplars and Elms), conservation genetics, and forest history. The consortium have focused in elucidating the role of gene flow in the adaptation of Mediterranean species, the mechanism and pattern of variability related to adaptive and neutral traits, the influence of history and human intervention in shaping the actual pattern of diversity, and use of information to provide rules for the use of forest reproductive material and establishing conservation programs in Spain. The INIA is acting as coordinator of the Euforgen program in Spain, with an active role of the other two Organisations in the different networks and is organising different graduate studies on the field of conservation genetics for Spanish and Latin-American graduate students.

The key persons involving in the NoE are:

Dr Ricardo Alía has strong expertise in quantitative and population genetics, with a main interest in the genetic structure of Mediterranean pines, the role of different evolution factors in shaping this structure. The main field of applications of the work is to the conservation programs, and the use of forest reproductive material under a sustainable forest management. He is National Coordinator of EUFORGEN program in Spain.

Dr Luis Gil is a full professor at Madrid Polytechnic University, and is specialized in forest history, adaptation and genetic structure of Mediterranean species of genus *Pinus*, *Quercus* and *Fagus*. He has been involved in several European projects and has been the National representative in the former EUFORGEN Mediterranean Oaks Network. His work is mainly focused on the conservation of forest genetic resources and on developing a breeding program for Spanish elms to control Dutch elm disease.

Dr. Pablo G Goicoechea is a geneticist at Neiker with exclusive dedication, during the last ten years, to forest genetics. He has been involved in several projects aimed to use molecular markers to describe forest trees genetic diversity for utilization and conservation of forest genetic resources. His current work is aimed to decipher the molecular basis of phenotypic traits variation and to analyse the patterns of gene flow and hybridization among white oaks.

Dr. Maria Teresa Cervera is an expert in molecular genetics. In her research she is interested in the variation of genes in relation to water stress adaptation and phenology. She has developed different tools for genetic analysis, and she is responsible of the coordination of the national network on forest genomics.

P17 – Università degli Studi di Udine (INIUD)

The Department of Crop and Environmental Sciences the University of Udine is a leader in plant science research in Italy and is active in plant genomics, plant breeding, agronomy, crop ecology and physiology, plant and soil biochemistry. The research group working on plant genomics has been active for quite some time and has developed a number of DNA analysis technologies that are widely used, gaining considerable experience in sequence diversity analysis, molecular marker analysis, molecular population genetics, physical mapping, genome evolution, repetitive DNA analysis and bioinformatics.

The key persons involving in the NoE are:

Michele Morgante is Professor of Genetics with particular expertise in plant genomics and molecular population genetics. He coordinated a FP4 project on tree genomics and participated in other FP3, 4 and 5 projects on tree genetics and genomics. His research group has been instrumental in establishing a number of genetic technology platforms that are now being widely deployed in plant genomic research. Among his achievements are the first reports on the utilization of nuclear microsatellites in plant genomes and on the identification of chloroplast microsatellites and their utility in plants, the completion of physical maps of the maize and grapevine genomes. Over 60 publications on plant genetics in journals such as *Nature Genetics*, *Nature Reviews Genetics*, *PNAS*, *Plant Cell*, Genetics with high impact in the field (over 2600 citations reported by the ISI Web of Science). He is Associate Editor of *Theoretical and Applied Genetics* and of *Tree Genetics and Genomes*.

Angelo Olivieri is Professor of Plant Breeding and has over 30 years of experience in plant breeding and genetics research both on crop species as well as on trees. He has participated in EU funded projects in FP3 and FP5 and lately has focused on the measurement of gene flow in plant populations using molecular markers. Among his achievements are the first reports on the utilization of nuclear microsatellites in plant genomes.

Alberto Policriti is Professor of Informatics with expertise in bioinformatics of gene expression, sequence analysis and systems biology. He recently developed a novel algorithm for structured motifs search.

P18 – Centre national de la recherche scientifique (CNRS)

The CNRS organization in EVOLTREE is composed of 5 units. Partner 18a works on biodiversity and global change under ecological, genetical and evolutionary process. The main competences of 18a comprise population genetics, genomics, evolution and ecophysiology in tree species. Partner 18b and Partner 18d helps maintaining the European pollen database. Partner 18b and 18d have an extensive experience in palynology and paleodata for reconstructing past environments. Partner 18c and 18e competences are comparative genomics approaches and the development of methods and tools for the integration of data and information related to genomics and functional genomics. Partner 18c and 18e have also an important competence and responsibility in functional genomics platform.

The different units are:

- UMR 8079 Paris Orsay (Joint research unit of CNRS, of the Université de Paris Sud-XI and of the Ecole Nationale du Génie Rural et des Eaux et Forêts (ENGREF))

- UMR 6116 Marseille (Joint research unit of CNRS and of the Université d'Aix-Marseille 3)
- UMR 5554 Montpellier (Joint research unit of CNRS and Université Montpellier 2)
- UMR 5162 Bordeaux (Joint research unit of CNRS, Université Bordeaux 1, and Université Bordeaux 2)
- UMR 5800 Bordeaux (Joint research unit of CNRS and Université Bordeaux 1)

The key persons involving in the NoE are:

UMR CNRS-ENGREF 8079

The key persons involving in Evoltree are **Dr Nathalie Frascaria-Lacoste**, assistant professor at the ENGREF, **Dr Frederic Austerlitz** and **Dr Eric Dufrene** senior scientists at the CNRS and **Dr Paul Leadley** professor at the University Paris Sud 11.

UMR CNRS 6116

The key persons involving in Evoltree are **Dr Frederic Medail**, Professor at the University Paul Cézanne / Aix-Marseille III; **Dr Valerie Andrieu**, lecturer at the University Paul Cézanne / Aix-Marseille, and **Dr J.-L. de Beaulieu**, Emeritus D.R. CNRS.

UMR CNRS 5162

Dr. Antoine de Daruvar is professor, Université Bordeaux 2. His main scientific interests are comparative genomics approaches and the development of methods and tools for the integration of data and information related to genomics and functional genomics. He has created and is director of the Centre de Bioinformatique de Bordeaux. As well as its own research activities, the group provides services for information management and processing to research groups involved in functional genomics projects.

URM CNRS 5554

Dr Rachid Cheddadi is senior scientist CNRS and has an extensive experience in palynology, spatial data analysis and palaeoclimate and palaeovegetation reconstructions. He is author and co-author of more than 35 peer-reviewed scientific publications. During the last years, he had strong scientific relationships with geneticists in the frame of three EU funded projects which are FAIROAK (FAIR PL95-0297), CYTOFOR (FAIR5-CT97-3664) and FOSSILVA (EVK2-1999-00036).

UMR CNRS 800

Dr Ferraro is assistant professor at Université Bordeaux 1.

P19 – Uniwersytetu Kazimierza Wielkiego (SLU)

Partner 19 is the consortium of scientists assembled under the aegis of Umeå Plant Science Center (SLU) from the Department of Plant Physiology of Umeå University (UmU) and from the Department of Forest Genetics and Plant Physiology of The Swedish University of Agricultural Sciences (SLU) situated in Umeå, Sweden. Umeå Plant Science Center is world leading institution in the area of Tree genomics having initiated the largest sequencing effort of poplar ESTs and having made a unique contribution to the DOE effort of poplar genome sequencing. The main area of competences at UPSC are functional genomics in poplar that combines transcript and metabolic profiling with large scale analysis of transgenic poplar plants altered in the expression of genes involved in wood formation. A platform consisting of a suite of analytical procedures has also been put in place to analyse the transgenic poplar plants resulting from the over expression and knockout programs. This analytical platform includes, techniques from confocal microscopy to highly specialized chemical analytical programs such as pyrolysis-MS on wood tissues. A complementary informatics structure for storage and querying of data has also been established of which microarray data release is already online (www.populusdb.umu.se).

The key persons involving in the NoE are:

Rishikesh P. Bhalerao received his Ph. D in 1993 and coordinates the functional genomics efforts at SLU. He has published over 30 articles in peer reviewed journals. His expertise is in the area of poplar and Arabidopsis functional genomics with emphasis on dormancy.

Jan Karlsson coordinates the bioinformatics of microarrays and genome analysis. His research focuses on analysis of plant-pathogen interactions.

Vaughan Hurry is associate professor at SLU and his area of expertise is mechanisms underlying cold hardiness in Arabidopsis and poplar.

Torgny Näsholm is professor at SLU and his area of expertise is nutritional control of plant development.

P20 – Uniwersytetu Kazimierza Wielkiego (KWUB)

The consortium is composed of three institutions: Uniwersytet Kazimierza Wielkiego (UKW, Bydgoszcz), Instytut Badawczy Lesnictwa (IBL, Warszawa) and Instytut Dendrologii Polska Akademia Nauk (IDPAN, Kórnik). The competences of these institutions are population and quantitative genetics, phylogeography, molecular biology and analysis of spatial genetic data. They are specialized in modelling of contemporary gene flow and mating patterns, including ecological and genetic determinants of reproductive success, observed at different life stages. Other aspects include: genetics of mycorrhizal fungi and tree ecophysiology (e.g. physiological reaction of trees to stress factors). The group has founded and manages a number of provenance and family trials for major forest tree species and established a strong collaboration with State Forests.

The key persons involving in the NoE are:

Prof. Jaroslaw Burczyk (UKW) has a strong expertise in population genetics, mating systems and gene flow in plants.

Prof. Andrzej Lewandowski (IDPAN) has a long experience in genetic diversity and phylogeography of forest trees.

Dr Jan Kowalczyk (IBL) has a strong knowledge and expertise in quantitative genetics. He is also involved in the project EUFORGEN (Temperate Oaks and Beech).

Dr Artur Dzialuk (UKW) has research interest in molecular genetics and phylogeography of forest trees.

P21 – Oulun Yliopisto (UOULU)

The UOULU plant geneticists have long experience in forest population and quantitative genetics, especially in studies of the genetics of adaptation. The main interest has been the genetic basis of the clinal variation of timing of vegetative growth in pines. For this purpose, the group has used extensively molecular population genetics methods, including marker and sequence variation, often in collaborations. Metla has a long tradition in conducting quantitative genetic studies on e.g., phenology, growth rate, cold tolerance, resistance against fungi and herbivores in e.g. *Pinus sylvestris*, *Picea abies*, *Betula pendula*, *Acer platanoides* and *Quercus robur*.

The key persons involving in the NoE are:

Outi Savolainen is Professor of genetics at the University of Oulu since 1990. Her research interests is in population and evolutionary genetics of trees and Arabidopsis relatives. She is Coordinator of EU FP4 project Motors, coordinator of EU FPV project Treesnips. She is Associate editor of Genetics and Tree Genetics and Genomes and she works at the Editorial board of Molecular Ecology.

Witold Wachowiak, post doctoral fellow, holds a Ph.D. in 2003 from the Polish Academy of Science and works on Population genetics of pines.

Katri Kärkkäinen is Professor in forest genetics at Finnish Forest Research Institute and holds a PhD in genetics 1994, University of Oulu. He is an expert in population genetics of forest trees.

Matti Haapanen is a senior researcher, D. Sc. (Agr & For) 2002 at the University of Helsinki. He has is an expert in quantitative genetics and experimental design.

P22 – University of Southampton (Soton)

The University of Southampton is a research-led institute within the top 10 of UK universities, assessed for quality of research and teaching (<http://www.soton.ac.uk>). In EVOLTREE the university will contribute in expertise in the mapping of QTL for adaptive traits, high throughput genomics and proteomics, database of adaptive trait data and the POPYOMICS databases PHYSIO-TRAIT and DISEASE-TRAIT, access to the infrastructure of the Forest Research open-top chambers, 'DNA' and 'germplasm' bank for *Populus*, contribution to studying the wide population of *Populus nigra*, currently being used for LD and association mapping in Popyomics

The key persons involving in the NoE are:

Pr Gail Taylor is research leader and chair of Plant Biology experiment on the responses of a forest ecosystem to future atmospheric CO₂ (<http://www.unitus.it/euroface/>). She is a project partner in POPGENICs, a USA Department of Energy funded project to optimise carbon sequestration in trees

Dr Mark S. Dixon, a Senior Lecturer and project leader with extensive experience of plant molecular biology, is interested in genes controlling leaf development and disease resistance. He has developed several projects including the use of neutral molecular markers – SSRs, SNPs, AFLPs. Along with Gail Taylor, he manages the Genomics Laboratory at Southampton University and they are working collaboratively on projects for QTL detection and identifying adaptive traits.

Dr Nathaniel R. Street has extensive expertise in transcriptome analysis in the genus *Populus*. He is developing the proteomics approaches in *Populus* at Southampton and will interact with ECS (Electronic and computer Science) to develop grid-based solutions such as those in active project myGRID and Pla-Net, for on-line resources in the Laboratory without Walls.

Dr Anne M. Rae has extensive expertise (8 years) in QTL analysis combined with physiological traiting. She oversees the POPYOMICS plantation and research on mapping and wide population within the LD study of *Populus*

P23 – University of West Hungary (UWH)

The common competence of the consortium lies in molecular and quantitative genetic analysis of forest tree species, insects and fungi, with specific reference to intraspecific genetic differentiation and adaptive response. In addition to genetic investigations, monitoring and evolutionary ecologic analysis of population dynamics and response to changes in the ecosystem is pursued. All institutions maintain close contacts to operational forestry, propagation material production and control as well as to forest health monitoring. The different units involving in the NoE are the University of West Hungary (UWH), the Faculty of Forestry (Sopron), the Institute of Environmental Sciences, the Institute of Forest Protection and the Forest Research Institute (ERTI).

The key persons involving in the NoE are:

Pr Csaba Matyas is a forest engineer, and he is a associated member of the Hungarian Academy of Sciences. He is head of Institute of Environmental Sciences (UWH)

Dr Attila Borovics is a forestry engineer, and is head of Genetics department (ERTI)

Pr Ferenc Lakatos is a forestry engineer, and he is professor in forest entomology at the Institut of Forest Protection (UWH).

P24 – Uppsala Universitet (UU)

The main research focus of the program in Evolutionary Functional Genomics at Uppsala University is on the molecular evolution of adaptive traits in plants. To that end we are using and developing methods in population genomics, gene expression analysis, quantitative genetics and genetic mapping. We also have competences in ancient DNA analysis, phylogeography and conservation genetics. Over the last years we have been working primarily on *P. abies*, *Betula*, *Larix*, *Salix*, *A. thaliana*, *B. nigra*, *C. bursa-pastoris* and *P. patens*.

The key persons involving in the NoE are:

Martin Lascoux is professor of population genetics.

Ulf Lagercrantz is professor of evolutionary functional genomics, and head of the program.

Anna Palmé is assistant professor.

Niclas Gyllenstrand is researcher, and he is responsible for development of lab methods.

P25 – Max Planck Gesellschaft Zur Foerderung Der Wissenschaften E.V. (MPI-COE)

Max Planck Institute for Chemical Ecology, Jena, Germany (MPI-COE) is specialized in Molecular techniques to study population genetics and ecology of insects, especially populations of *Lymantria dispar*. Insect genomics, and genetic approaches to studying adaptations of insects to chemical and biological stresses. This institute has a long expertise in construction and screening of cDNA libraries of insects, and in identifying insect genes of selective importance in adaptation to anti-herbivory strategies of plants

The key persons involving in the NoE are:

Dr Annette Reineke is a Group Leader in Population Genetics in the Department of Entomology.

Pr David Heckel is Director of the MPI-COE and head of the Department of Entomology.

Dr Heiko Vogel is Group Leader in Genomics the Department of Entomology.