Curriculum Vitae

Steven Gregory Ralph, Ph.D.

Assistant Professor
217–10 Cornell Street, Department of Biology
University of North Dakota, Grand Forks, North Dakota, USA, 58202-9019
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Education

09.1996_05.2002 Ph.D., Dept. of Biochemistry and Molecular Biology
University of British Columbia (UBC), Vancouver, Canada
Conducted research on genome organization and evolution of the ATP-Binding Cassette (ABC) transporter family in higher eukaryotes, as well as transcript profiling of the human ABC family in normal and cancerous tissues, and in response to chemotherapeutic drug exposure.
Supervisor: Dr. Victor Ling

09.1991_05.1996 B.Sc. (Honours) in Biological Sciences
University of Windsor (U of W), Windsor, Canada

Employment and research training

07.2007_present Assistant Professor, Dept. of Biology, University of North Dakota (UND)

10.2005_06.2007 Post-doctoral Research Associate
Genome Canada Conifer Forest Health program, Michael Smith Laboratories, UBC
Directed a research team of 3-4 staff and students focused on characterizing the role of phenolic defenses in spruce trees against stem-boring insects using functional genomics, biochemical and ecological approaches. Lead Research Associate coordinating the sequencing, annotation and evolutionary analysis of ca. 10,000 spruce full-length cDNAs together with the British Columbia Cancer Agency Genome Sciences Centre (GSC). Supervisor: Dr. Jörg Bohlmann

02.2002_09.2005 Post-doctoral Research Associate
Genome Canada Treenomix program, Dept. of Forest Sciences, UBC
Established and equipped a new research laboratory housing the Treenomix program in the Dept. of Forest Sciences. Hired, trained and directed a research team of 4-8 staff to develop and apply functional genomics resources for the study of plant-insect interactions in spruce and poplar tree species. Lead Research Associate coordinating research activities and project management for several multi-million dollar genomics projects [i.e., ca. 350,000 expressed sequence tags (ESTs), ca. 11,000 full-length cDNAs, 15.5K and 21.8K cDNA microarray formats, and supporting DNA sequence and microarray databases] in collaboration with national research centres including the GSC, the Prostate Centre at Vancouver General Hospital, and the Biotechnology Research Institute in Montreal. Scientific contributor and member of the international consortium that completed the mapping and sequencing of the first tree genome (black cottonwood). Supervisor: Dr. Jörg Bohlmann

05.1993_08.1996 Research Assistant
Dept. of Biological Sciences, U of W
Conducted research on the genotoxic effects of environmental contaminants and pesticides on aquatic sentinel organisms using assays for genomic DNA damage.
Supervisor: Dr. Michael Petras

05.1993_05.1994 Animal Quarters Technician
Dept. of Biological Sciences, U of W
Research technician responsible for the maintenance of a departmental animal quarters facility housing small mammals and aquatic species. Supervisor: Dr. Michael Petras

Awards, scholarships and fellowships

07.2006 Arthur Neish Young Investigator Award, Phytochemistry Society of North America

03.2001 Patricia Manson Post-doctoral Fellowship, Lymphoma Foundation of Canada, declined

09.2000_08.2001 University Graduate Fellowship, UBC

09.1998_08.2000 Izaak Walton Killam Memorial Pre-doctoral Fellowship

09.1996_08.2000 Natural Sciences and Engineering Research Council of Canada Post-graduate Scholarship

05.1996 Board of Governor's Medal in Biological Sciences, U of W

(highest graduating academic average)

Teaching

08.2007_present Co-instructor, BIOL491/503 Ecological and Evolutionary Genomics, Dept. of Biology, UND

01.2007_05.2007 Co-instructor, BIOL462 Ecological Plant Biochemistry, Dept. of Botany, UBC

07.2004_06.2006 Instructor, Scientist in Residence elementary school program, Vancouver School Board, Vancouver

03.2006 Guest lecturer, FRST302 Forest Genetics, Dept. of Forest Sciences, UBC
09.2005 Guest lecturer, FRST535 Applied Population Genetics, Dept. of Forest Sciences, UBC

01.2002_05.2002 Co-instructor, Advanced Molecular Biology Laboratory Outreach program, Michael Smith Laboratories, UBC

01.2000_12.2002 Instructor, Hands-on Science program, Science World, provincial science education centre, Vancouver

05.2000_08.2000 Volunteer instructor, Surrey School District Career Education program, Surrey School
05.1999_08.1999 Board, Surrey, Canada

01.1995_05.1995 Teaching Assistant, 55-211 Genetics, Dept. of Biology, U of W
01.1994_05.1994

09.1993_12.1993 Teaching Assistant, 55-250 Comparative Vertebrate Zoology, Dept. of Biology, U of W

Direct supervision of staff

06.2003_present Sharon Jancsik Research Assistant (Treenomix; Conifer Forest Health, UND)
05.2006_08.2006 Tina Chou Summer student (Conifer Forest Health)
04.2003_10.2005 Claire Oddy Research Assistant (Treenomix)
07.2003_10.2005 Hesther Yueh Research Assistant (Treenomix)
05.2005_09.2005 Michelle Tang Summer student (Treenomix)
09.2004_08.2005 Gillian Leung Co-op student (Treenomix)
02.2002_08.2004 Natalia Kolosova Research Assistant (Treenomix)
05.2004_08.2004 Javier Alfaro Summer student (Treenomix)
05.2004_08.2004 Luke Brocki Summer student (Treenomix)

Direct supervision of staff (continued)

05.2004_08.2004 Xiao Ling Li Summer student (Treenomix)

05.2002_08.2003 Dawn Cooper Research Assistant (Treenomix)
05.2001_08.2001 Krista Cleveland Research Assistant (BC Cancer Research Centre)
05.2001_08.2001 Ron deLeeuw Research Assistant (BC Cancer Research Centre)
05.2001_08.2001 Bradley Coe Research Assistant (BC Cancer Research Centre)

Mentoring of students

05.2003_07.2007 Ryan Philippe Ph.D. student (Botany, UBC)
09.2004_07.2007 Natalia Kolosova Ph.D. student (Botany, UBC)
01.2005_07.2007 Jason Holliday Ph.D. student (Forest Sciences, UBC)
09.2006_07.2007 Tina Chou Master's student (Botany, UBC)
01.2004_05.2006 Scott DiGuistini Master's student (Wood Science, UBC)
01.2006_03.2006 Eric Abbott Honours project (Botany, UBC)
09.2004_12.2005 Alex Lane Master's student (Botany, UBC)
05.2000_08.2000 Jenny Cheng Master's student (Pathology & Laboratory Medicine, UBC)
09.1998_05.2001 Allison Pahl Master's student (Biochemistry, UBC)

Professional activities and development

Journal reviewer for Plant Molecular Biology (2006), New Phytologist (2004, 2006, 2007), International Journal of Cancer (2000), Clinical Cancer Research (1999), Cancer Research (1997-2001)

09.2007_present Participant, Alice T. Clark Scholars Mentoring Program, UND

01.2005_07.2007 Member, Ph.D. thesis committee of Jason Holliday, supervisor Dr. Sally Aitken, Dept. of Forest Sciences, UBC

09.2006 Certificate, Institute for Communication Improvement: Professional Grant Proposal Writing workshop, Simon Fraser University, Burnaby, Canada

05.2006 Certificate, Centre for Teaching and Academic Growth:

Instructional Skills Workshop for Faculty, UBC

12.2004 Invited contributor, poplar genome annotation jamboree, Dept. of Energy Joint Genomes

Institute, Walnut Creek, USA

01.1998_12.2001 Manager/operator, British Columbia Cancer Research Centre (Vancouver) sequencing facility (ca. 2.5 million basepair/year, plus DNA fragment analysis)

Professional affiliations

01.2003_present International Populus Genome Consortium
06.2005_present Canadian Society of Plant Physiologists
01.2006_present American Society of Plant Biologists
01.2006_present Phytochemical Society of North America
01.2006_present International Society of Chemical Ecology
06.2006_present American Phytopathological Society
03.2007_present Great Plains Tree Pest Council

University and community service

07.1999_07.2002 Contributed to the Canadian Cancer Society's Camp Goodtimes in various capacities including Camp Director, Camp Counselor and fundraiser Event Staff

University and community service (continued)

01.1996_12.1998 Student representative, Dept. Biochemistry & Molecular Biology Safety Committee, UBC

01.1997_12.1997 Co-founder and co-chair of the Science, Engineering and Technology Innovations seminar series at Green College, UBC

08.1992_04.1997 Contributed to minor hockey in Ontario and British Columbia in various capacities including Team Manager, Head Coach and Assistant Coach

Grant support

The Environmental Genetics and Genomics (EGG) Center. ND EPSCoR/NSF, $2,250,000, PI: Shahryar Kianian, Co-PIs: Steven G. Ralph, Holly Brown-Borg, Anne Denton, Xiaoning Lu, Phillip McClean, Turk Rhen and Mark Sheridan. Pending, submitted August 21st, 2007.

Peer reviewed journal publications, book chapters and conference proceedings

Total peer reviewed journal publications: 26 plus two submitted
First/co-first author: 12; second author: 8; contributing author: 8; corresponding author: 0

Total book chapters and conference proceedings: 4
First/co-first author: 1; second author: 2; contributing author: 1; corresponding author: 0

Total citations: 485; group citations: 59; self citations: 58.

Citations were extracted from the Scopus database (www.scopus.com) September 15th, 2007. Group-citations occur when one or more authors on the cited paper are also an author on the citing paper. Self-citations occur when "Ralph, S" is an author on both the cited and citing papers. Note that self-citations are not included among group-citations.

*Co-lead authors contributed equally to this work.

32. Ralph SG, Jancsik S, Chun HJE, Kolosova N, Keeling CI, Cooper D, Oddy C, White R, Ritland CE, Nantel A, Kirkpatrick R, Palmquist D, Wynhoven B, Butterfield YSN, Liu J, Stott J, Yang G, Barber S, Siddiqui A, Holt RA, Jones SJM, Marra MA, Douglas CJ, Ritland K Bohlmann J, A high-quality full-Length cDNA and EST resource for spruce and its utility for conifer gene annotation and characterization of insect-induced defenses. Submitted to Plant Physiology June 25th, 2007; manuscript ID PLANTPHYSIOL/2007/104570.

31. Holliday AJ, Ralph SG, White R, Bohlmann J and Aitken SN, Global monitoring of gene expression within and among phenotypically divergent populations of Sitka spruce [Picea sitchensis (Bong.) Carr.]. Submitted to New Phytologist May 9th, 2007; manuscript ID NPH-MS-2007-05663.

30. Phillips MA, Walter MH, Ralph SG, Dabrowska P, Luck K, Urós EM, Boland W, Strack D, Rodriquez-Concepción M, Bohlmann J and Gershenzon J (2007) Functional identification and differential expression of 1-deoxy-D-xylulose 5-phosphate synthase in induced terpenoid resin formation of Norway spruce (Picea abies). Plant Molecular Biology 65: 243-257.
2006 Impact Factor: 3.57 (2007 not available); total citations: 0; group citations: 0; self citations: 0

29. Ralph SG, Jancsik S and Bohlmann J (2007) Dirigent proteins in conifer defense II: Extended gene discovery, phylogeny, and constitutive and stress-responsive gene expression analysis in spruce (Picea spp.). Phytochemistry 68: 1974-1990; invited paper.
2006 Impact Factor: 2.41 (2007 not available); total citations: 0; group citations: 0; self citations: 0

Peer reviewed journal publications, book chapters and conference proceedings (continued)

28. *Miranda M, *Ralph SG, Mellway R, White R, Heath MC, Bohlmann J and Constabel CP (2007) The transcriptional response of hybrid poplar (Populus trichocarpa x P. deltoides) to infection by Melampsora medusae leaf rust involves induction of flavonoid pathway genes leading to the accumulation of proanthocyanidins. Molecular Plant-Microbe Interactions 20: 816-831.
2005 Impact Factor: 3.92 (2007 not available); total citations: 0; group citations: 0; self citations: 0

27. *Ralph SG, *Hudgins JW, Jancsik S, Franceschi VR and Bohlmann J (2007) Aminocyclopropane carboxylic acid synthase is a regulated step in ethylene-dependent induced conifer defense: Full-length cDNA cloning of a multigene family, differential constitutive, and wound- and insect-induced expression, and cellular and subcellular localization in spruce and Douglas fir. Plant Physiology 143: 410-424.
2006 Impact Factor: 6.12 (2007 not available); total citations: 1; group citations: 0; self citations: 0

26. DiGuistini S, Ralph SG, Lim YW, Holt R, Jones S, Bohlmann J and Breuil C (2007) Generation and annotation of lodgepole pine and oleoresin-induced expressed sequences from the blue-stain fungus Ophiostoma clavigerum, a mountain pine beetle-associated pathogen. FEMS Microbiology Letters 267: 151-158.
2006 Impact Factor: 2.06 (2007 not available); total citations: 0; group citations: 0; self citations: 0

25. Friedmann M, Ralph SG, Aeschliman D, Zhuang J, Ritland K, Ellis BE, Bohlmann J and Douglas CJ (2007) Microarray gene expression profiling of developmental transitions in Sitka spruce (Picea sitchensis) apical shoots. Journal of Experimental Botany 58: 593-614.
2006 Impact Factor: 3.36 (2007 not available); total citations: 1; group citations: 0; self citations: 1

24. Lippert D, Chowrira S, Ralph SG, Zhuang J, Aeschliman D, Ritland C, Ritland K and Bohlmann J (2007) Conifer defense against insects: Proteome analysis of Sitka spruce (Picea sitchensis) bark induced by mechanical wounding or feeding by white pine weevils (Pissodes strobi). Proteomics 7: 248-270.
2006 Impact Factor: 5.73 (2007 not available); total citations: 1; group citations: 0; self citations: 0

23. Bérubé Y, Zhuang J, Rungis D, Ralph S, Bohlmann J and Ritland K (2007) Characterization of EST-SSRs in loblolly pine and spruce. Tree Genetics and Genomes 3: 251-259.
Impact Factor: not available; total citations: 0; group citations: 0; self citations: 0

22. *Hudgins JW, *Ralph SG, Franceschi VR and Bohlmann J (2006) Ethylene in induced conifer defense: cDNA cloning, protein expression, and cellular and subcellular localization of 1-aminocyclopropane-1-carboxylate oxidase in resin duct and phloem parenchyma cells. Planta 224: 865-877.
2006 Impact Factor: 2.96; total citations: 4; group citations: 1; self citations: 3

21. Ralph SG, Yueh H, Friedmann M, Aeschliman D, Zeznik JA, Nelson CC, Butterfield YSN, Kirkpatrick R, Liu J, Jones SJM, Marra MA, Douglas CJ, Ritland K and Bohlmann J (2006) Conifer defense against insects: Microarray gene expression profiling of Sitka spruce (Picea sitchensis) induced by mechanical wounding or feeding by spruce budworms (Choristoneura occidentalis) or white pine weevils (Pissodes strobi) reveals large-scale changes of the host transcriptome. Plant, Cell and Environment 29: 1545-1570.
2006 Impact Factor: 4.13; total citations: 11; group citations: 3; self citations: 5

Peer reviewed journal publications, book chapters and conference proceedings (continued)

20. Tuskan GA, DiFazio S†, Jansson S†, Bohlmann J†, Grigoriev I†, Hellsten U†, Putnam N†, Ralph S†, Rombauts S†, Salamov A†, Schein J†, Sterck L†, Aerts A, Bhalerao RR, Bhalerao RP, Blaudez D, Boerjan W, Brun A, Brunner A, Busov V, Campbell M, Carlson J, Chalot M, Chapman J, Chen GL, Cooper D, Coutinho PM, Couturier J, Covert S,

Cronk Q, Cunningham R, Davis J, Degroeve S, Déjardin A, dePamphilis C, Detter J, Dirks B, Dubchak I, Duplessis S, Ehlting J, Ellis B, Gendler K, Goodstein D, Gribskov M, Grimwood J, Groover A, Gunter L, Hamberger B, Heinze B, Helariutta Y, Henrissat B, Holligan D, Holt R, Huang W, Islam-Faridi N, Jones S, Jones-Rhoades M, Jorgensen R, Joshi C, Kangasjärvi J, Karlsson J, Kelleher C, Kirkpatrick R, Kirst M, Kohler A, Kalluri U, Larimer F, Leebens-Mack J, Leplé J-C, Locascio P, Lucas S, Martin F, Montanini B, Napoli C, Nelson DR, Nelson C, Nieminen K, Nilsson O, Pereda V, Peter G, Philippe R, Pilate G, Poliakov A, Razumovskaya J, Richardson P, Rinaldi C, Ritland K, Rouzé P, Ryaboy D, Schmutz J, Schrader J, Segerman B, Shin H, Siddiqui A, Sterky F, Terry A, Tsai C-J, Uberbacher E, Unneberg P, Vahala J, Wall K, Wessler S, Yang G, Yin T, Douglas C[‡], Marra M[‡], Sandberg G[‡], Van de Peer Y[‡] and Rokhsar D[‡] (2006) The genome of black cottonwood, Populus trichocarpa (Torr. & Gray). Science 313: 1596-1604.
[‡] These authors (5) contributed equally to this work as senior authors
[†] These authors (11) contributed equally to this work as second authors
2006 Impact Factor: 29.78; total citations: 70; group citations: 20; self citations: 0

19. Ritland K, Ralph S, Lippert D, Rungis D and Bohlmann J (2006) New directions in conifer genomics. In Williams C (ed): “Landscapes, Genomics and Transgenic Conifer Forests.” New York: Kluwer-Springer Press, pp 75-84.

18. Ralph S, Oddy C, Cooper D, Yueh H, Jancsik S, Kolosova N, Philippe RN, Aeschliman D, White R, Huber D, Ritland CE, Benoit F, Rigby T, Nantel A, Butterfield YSN, Kirkpatrick R, Chun E, Liu J, Palmquist D, Wynhoven B, Stott J, Yang G, Barber S, Holt RA, Siddiqui A, Jones SJM, Marra MA, Ellis BE, Douglas CJ, Ritland K and Bohlmann J (2006) Genomics of hybrid poplar (Populus trichocarpa x deltoides) interacting with forest tent caterpillars (Malacosoma disstria): Normalized and full-length cDNA libraries, expressed sequence tags (ESTs), and a cDNA microarray for the study of insect-induced defenses in poplar. Molecular Ecology 15: 1275-1297; invited paper.
2006 Impact Factor: 4.82; total citations: 17; group citations: 2; self citations: 2

17. *Ralph S, *Park JY, Bohlmann J and Mansfield SD (2006) Dirigent proteins in conifer defense: gene discovery, phylogeny and differential wound- and insect-induced expression of a family of DIR and DIR-like genes in spruce (Picea spp.). Plant Molecular Biology 60: 21-40.
2006 Impact Factor: 3.32; total citations: 13; group citations: 2; self citations: 6

16. Lippert D, Zhuang J, Ralph S, Ellis DE, Gilbert M, Olafson R, Ritland K, Ellis B, Douglas CJ and Bohlmann J (2005) Proteome analysis of early somatic embryogenesis in Picea glauca. Proteomics 5: 461-473.
2005 Impact Factor: 6.08; total citations: 12; group citations: 2; self citations: 2

15. Miller B, Madilao LL, Ralph S and Bohlmann J (2005) Insect-induced conifer defense. White pine weevil and methyl jasmonate induce traumatic resinosis, de novo formed volatile emissions, and accumulation of terpenoid synthase and putative octadecanoid pathway transcripts in Sitka spruce. Plant Physiology 137: 369-382.
2005 Impact Factor: 6.11; total citations: 32; group citations: 8; self citations: 7

14. Park JY, Ralph S, Bohlmann J and Mansfield SD (2005) The multigene dirigent family of Sitka Spruce (Picea sitchensis): differential gene expression in response to wounding. Proceedings of the 13th International Symposium on Wood and Pulping Chemistry (ISWPC), Auckland, New Zealand. Vol. 2: 181-188.

13. Huber DP, Ralph S and Bohlmann J (2004) Genomic hardwiring and phenotypic plasticity of terpenoid-based defenses in conifers. Journal of Chemical Ecology 30: 2399-2418.
2004 Impact Factor: 1.60; total citations: 16; group citations: 8; self citations: 6

Peer reviewed journal publications, book chapters and conference proceedings (continued)

12. Rungis D, Bérubé Y, Zhuang J, Ralph S, Ritland CE, Ellis BE, Douglas C, Bohlmann J and Ritland K (2004) Robust simple sequence repeat markers for spruce (Picea spp.) from expressed sequence tags. Theoretical & Applied Genetics 109: 1283-1294.
2004 Impact Factor: 2.98; total citations: 20; group citations: 3; self citations: 3

11. Kolosova N, Miller B, Ralph S, Ellis BE, Douglas C, Ritland K and Bohlmann J (2004) Isolation of high-quality RNA from gymnosperm and angiosperm trees. Biotechniques 36: 821-824.

2004 Impact Factor: 2.54; total citations: 16; group citations: 2; self citations: 10

10. Sheps JA, Ralph S, Zhao Z, Baillie DL and Ling V (2004) The ABC transporter gene family of Caenorhabditis elegans has implications for the evolutionary dynamics of multidrug resistance in eukaryotes. Genome Biology 5: R15.1-R15.17.
2005 Impact Factor: 9.71 (2004 not available); total citations: 36; group citations: 5; self citations: 0

9. Ralph SG (2002) mRNA expression profiling of the ATP-Binding Cassette transporter family. Ph.D. dissertation, Department of Biochemistry and Molecular Biology, University of British Columbia, Vancouver, Canada, pp 1-223.

8. Guan Y, Ralph S and Hogge DE (2002) Polyclonal normal hematopoietic progenitors in patients with acute myeloid leukemia. Experimental Hematology 30: 721-728.
2002 Impact Factor: 3.36; total citations: 6; group citations: 1; self citations: 0

7. Ralph S and Petras M (1998) Caged amphibian tadpoles and in situ genotoxicity monitoring of aquatic environments with the alkaline single cell gel electrophoresis (comet) assay. Mutation Research 413: 235-250.
1998 Impact Factor: 2.06; total citations: 11; group citations: 0; self citations: 0

6. Ralph S and Petras M (1998) Comparison of sensitivity to methyl methanesulphonate among tadpole developmental stages using the alkaline single-cell gel electrophoresis (comet) assay. Environmental & Molecular Mutagenesis 31: 374-382.
1998 Impact Factor: 2.25; total citations: 7; group citations: 0; self citations: 0

5. Clements C, Ralph S and Petras M (1997) Genotoxicity of select herbicides in Rana catesbeiana tadpoles using the alkaline single cell gel DNA electrophoresis (comet) assay. Environmental & Molecular Mutagenesis 29: 277-288.
1997 Impact Factor: 2.46; total citations: 65; group citations: 0; self citations: 3

4. Ralph S and Petras M (1997) Genotoxicity monitoring of small bodies of water using two species of tadpoles and the alkaline single cell gel (comet) assay. Environmental & Molecular Mutagenesis 29: 418-430.
1997 Impact Factor: 2.46; total citations: 25; group citations: 0; self citations: 3

3. Ralph S, Petras M, Pandrangi R and Vrzoc M (1996) Alkaline single cell gel (comet) assay and genotoxicity monitoring using two species of tadpoles. Environmental & Molecular Mutagenesis 28: 112-120.
1996 Impact Factor: 1.94; total citations: 34; group citations: 1; self citations: 3

2. Petras M, Vrzoc M, Pandrangi R, Ralph S and Perry K (1995) Biological monitoring of environmental genotoxicity in southwestern Ontario. In Butterworth FM, Corkum LD, Guzman-Rincon J (eds.): “Biomonitors and Biomarkers as Indicators of Environmental Change.” New York: Plenum Press, pp 115-137.

1. Pandrangi R, Petras M, Ralph S and Vrzoc M (1995) Alkaline single cell gel (comet) assay and genotoxicity monitoring using bullheads and carp. Environmental & Molecular Mutagenesis 26: 345-356.
1995 Impact Factor: 2.37; total citations: 87; group citations: 1; self citations: 4

Large-scale DNA sequence submissions

8. Ralph SG, Chun HJE, Liao N, Ali J, Reid KE, Kolosova N, Cooper N, Cullis C, Jancsik S, Moore R, Mayo M, Wagner S, Holt RA, Jones SJM, Marra MA, Ritland CE, Ritland K and Bohlmann J (2007) The spruce transcriptome: Analysis of 2,644 sequence-verified full-length cDNAs; submitted to non-redundant division of GenBank (accession numbers EF676105 to EF678748; public release upon publication).

7. Ralph SG, Kirkpatrick R, Chun HJE, Palmquist D, Wynhoven B, Kolosova N, Cooper D, Oddy C, Jancsik S, Ritland CE, Douglas CJ, Butterfield YSN, Liu J, Stott J, Yang G, Barber S, Holt RA, Siddiqui A, Jones SJM, Marra MA, Ritland K and Bohlmann J (2007) The spruce transcriptome: Analysis of 6,464 sequence-verified full-length cDNAs; submitted to non-redundant division of GenBank (accession numbers EF081469 to EF087932; public release upon publication).

6. Ralph SG, Chun HJE, Cooper D, Kirkpatrick R, Palmquist D, Wynhoven B, Kolosova N, Oddy C, Jancsik S,

Douglas CJ, Butterfield YSN, Stott J, Yang G, Holt RA, Siddiqui A, Jones SJM, Marra MA, Ritland K and Bohlmann J (2007) The poplar transcriptome: Analysis of 4,664 sequence-verified full-length cDNAs; submitted to non-redundant division of GenBank (accession numbers EF144175 to EF148838; public release upon publication).

5. Ralph S, Kolosova N, Oddy C, Chun E, Reid KE, Liao N, Jancsik S, Moore R, Mayo M, Wagner S, King J, Yanchuk A, Holt R, Jones S, Marra M, Ritland CE, Ritland K and Bohlmann J (2007) The spruce transcriptome: Analysis of expressed sequence tags from multiple cDNA libraries; 27,738 ESTs submitted to dbEST division of GenBank (accession numbers ES852448 to ES880185).

4. Reid KE, Chun HE, Ralph S, Gillan T, Jancsik S, Liao N, Moore R, Mayo M, Wagner S, Featherstone R, Roger J, Brown-John M, Tam B, Sze WK, Wilton J, Kirk H, Matsuo C, King J, Yanchuk A, Holt R, Jones S, Marra M, Ritland CE, Ritland K and Bohlmann J (2007) The spruce transcriptome: Analysis of expressed sequence tags from multiple cDNA libraries; 31,043 ESTs submitted to dbEST division of GenBank (accession numbers ES659089 to ES671893 and ES244996 to ES263233).

3. DiGuistini S, Ralph SG, Lim YW, Holt R, Jones S, Bohlmann J and Breuil C (2006) Generation and annotation of lodgepole pine and oleoresin-induced expressed sequences from the blue-stain fungus Ophiostoma clavigerum, a Mountain Pine Beetle associated pathogen; 5,974 ESTs submitted to dbEST division of GenBank (accession numbers EE724403 to EE730376).

2. Ralph S, Kolosova N, Oddy C, Cooper D, Butterfield Y, Kirkpatrick R, Liu J, Palmquist D, Stott J, Barber S, Yang G, Babakaiff R, Brown-John M, Chand S, Featherstone R, Masson A, Mayo M, Moran J, Olson T, Wong D, Friedmann MF, Ritland CE, Siddiqui A, Holt R, Jones S, Marra M, Ellis BE, Douglas C, Ritland K and Bohlmann J (2004/2005) The spruce transcriptome: Analysis of expressed sequence tags from multiple cDNA libraries; 184,378 ESTs submitted to dbEST division of GenBank (accession numbers DR448912 to DR451924; DR463975 to DR595214; CV720218 to CV720219; CO203067 to CO245079; CO250245 to CO252887; CO252989 to CO253183; CO253265 to CO257405; CO257513 to CO258618; CN480886 to CN480910).

1. Ralph S, Cooper D, Kolosova N, Oddy C, Butterfield Y, Kirkpatrick R, Liu J, Palmquist D, Stott J, Barber S, Yang G, Babakaiff R, Brown-John M, Chand S, Featherstone R, Masson A, Mayo M, Moran J, Olson T, Wong D, Ritland CE, Siddiqui A, Holt R, Jones S, Marra M, Ellis BE, Douglas C, Ritland K and Bohlmann J (2004/2005) Genomics of hybrid poplar (Populus trichocarpa x deltoides) interacting with forest tent caterpillars (Malacosoma disstria): Normalized and full-length cDNA libraries, expressed sequence tags (ESTs), and a cDNA microarray for the study of insect-induced defenses in poplar; 116,369 ESTs submitted to dbEST division of GenBank (accession numbers DT469172 to DT526799; CV225307 to CV284047).

Invited presentation or symposium speaker

Presenting author(s) underlined

12. Ralph SG (2007) Exploring poplar defenses against defoliating insects using an integrated genomic and proteomic strategy. Plant Pathology Dept., North Dakota State University, Fargo, USA.

11. Ralph SG (2006) Forest tree defenses against insects: Functional genomics, biochemistry and cell biology. Biology Dept., University of North Dakota, Grand Forks, USA.

10. Ralph SG (2006) Poplar as a model for angiosperm tree biology: Investigating plant-insect interactions and the impact of domestication using functional genomics approaches. Dept. of Natural Resources and Environmental Sciences, University of Illinois, Champaign, USA.

9. Ralph S, Hudgins JW and Bohlmann J (2006) Conifer defense: Genomics, biochemistry, and cell biology. Dept. of Biochemistry, Max Planck Institute for Chemical Ecology, Jena, Germany.

8. Ralph S and Hudgins JW (2006) Functional genomics approaches to characterize the contribution of phenolic

secondary metabolites to insect induced defenses in conifer trees. Dept. of Forest Genetics and Plant Physiology, Swedish University of Agricultural Sciences, Umeå, Sweden.

7. Ralph S (2006) Characterization of insect induced defenses in spruce and poplar using functional genomics approaches. Dept. of Genetics and Biochemistry, Clemson University, Clemson, USA.

6. Ralph S (2005) Functional genomics in spruce and poplar: Towards understanding plant-insect interactions. Dept. of Biological Sciences, University of Calgary, Calgary, Canada.

5. Ralph S (2005) Large-scale transcript profiling using spruce and poplar cDNA microarrays: Towards understanding plant-herbivore interactions. 4th Montreal Microarray Symposium, Montreal, Canada.

4. Ralph S, Yueh H, Philippe R, Aeschliman D, Miranda M, Constabel P, Jancsik S, Oddy C, Rueffer K, Friedmann M, Ritland C, Nantel A, Rigby T, Butterfield Y, Kirkpatrick R, Stott J, Yang G, Siddiqui A, Jones S, Marra M, Ellis B, Ritland K, Douglas C and Bohlmann J (2004) Functional genomics in Populus: Towards understanding plant-herbivore interactions. 12th New Phytologist Symposium, Functional Genomics of Environmental Adaptation in Populus, Gatlinburg, USA.

3. Ralph S, Rungis D, Lippert D, Friedmann M, Zhuang J, Kelleher C, Aeschliman D, Kolosova N, Cooper D, Mattheus N, Oddy C, Jancsik S, Bérubé Y, Ritland C, Olafson R, Jones S, Marra M, Nelson C, Douglas C, Ellis BE, Ritland K and Bohlmann J (2003) Deciphering the spruce and poplar genomes: Physical, functional and comparative genomics. 48th Western Forest Genetics Association annual meeting, Whistler, Canada.

2. Bohlmann J (2003) Functional genomics of terpenoid defenses in spruce. Society of Experimental Biology annual meeting, Southampton, United Kingdom (presented by Ralph S).

1. Ralph S, Pahl A and Ling V (2000) Profiling of ABC transporters in normal and malignant tissues. 10th North American International Society for the Study of Xenobiotics meeting, Indianapolis, USA.

Abstracts and conference presentations

Presenting author(s) underlined

77. Ralph SG, Lippert D, Philippe RN, Jancsik S, White R and Bohlmann J (2007) Exploring poplar defenses against defoliating insects using an integrated genomic and proteomic strategy. ND/SD EPSCoR 6th Biennial Joint Conference, Fargo, USA (poster presentation).

Abstracts and conference presentations (continued)

76. Reid K, Ralph S, Chun E, Liao N, Ali J, Ritland K and Bohlmann J (2007) Gene discovery in the Treenomix conifer forest health EST and FLcDNA project. 5th Canadian Plant Genomics Workshop, Vancouver, Canada (poster presentation).

75. Holliday J, Ralph S, Bohlmann J and Aitken S (2007) Genomics of adaptation to local climate in Sitka spruce. 5th Canadian Plant Genomics Workshop, Vancouver, Canada (poster presentation).

74. Holliday J, Ralph S, Bohlmann J and Aitken S (2007) Functional and population genomics of adaptation to local climate in Sitka spruce. 5th Canadian Plant Genomics Workshop, Vancouver, Canada (oral presentation).

73. Ralph SG (2007) Development and application of genomic resources to investigate induced defenses in conifer trees. 2nd annual Treenomix Conifer Forest Health Workshop, Vancouver, Canada (oral presentation).

72. Douglas CJ, Friedmann M, Hamberger B, De Azevedo Souza C, Li E, Qiang W, Johnson L, Ellis M, White R,

Ralph S, Savidge R and Ellis B (2007) Comparative genomics of phenylpropanoid metabolism and xylem development in poplar, spruce and Arabidopsis. IUFRO Tree Biotechnology 2007, Ponta Delgada, Azores, Portugal (oral presentation).

71. Kolosova N, Ralph S, Breuil C, Ritland K and Bohlmann J (2007) Conifer defense against bark beetle-associated blue-stain fungi and white pine weevil. IUFRO Tree Biotechnology 2007, Ponta Delgada, Azores, Portugal (oral presentation).

70. Chun HJE, Ralph SG, Cooper D, Kirkpatrick R, Palmquist D, Wynhoven B, Kolosova N, Oddy C, Jancsik S, Douglas CJ, Yang G, Holt RA, Jones SJM, Marra MA, Ritland K and Bohlmann J (2007) The poplar transcriptome: Analysis of 4,664 sequence-verified full-length cDNAs. 8th Advances in Genome Biology and Technology Conference, Marco Island, USA (poster presentation).

69. Philippe RN, Ralph S, Jancsik S, White R and Bohlmann J (2007) Genomics of hybrid poplar (P. deltoides x trichocarpa) defense response to herbivorous insects. 10th Gordon Research Conference on Plant Herbivore Interaction, Ventura, USA (poster presentation).

68. Külheim C, Lippert D, Philippe R, Ralph S and Bohlmann J (2007) A proteome analysis of poplar-herbivore interactions. 10th Gordon Research Conference on Plant Herbivore Interaction, Ventura, USA (poster presentation).

67. Lippert D, Phillips M, Keeling C, Ralph S, Gershenzon J and Bohlmann J (2007) Using targeted proteomics to improve our understanding of conifer defense biology. Plant and Animal Genomes XV, San Diego, USA (oral presentation).

66. Holliday J, Ralph S, Bohlmann J and Aitken SN (2006) Temporal monitoring of autumn gene expression within and among populations of Sitka spruce reveals candidate genes for adaptation to local climate. IUFRO Working Group on Population, Ecological and Conservation Genetics, Madrid, Spain (oral presentation).

65. Ralph S (2006) Expressed spruce genome and functions in conifer defense: Gene discovery resources. 1st annual Treenomix Conifer Forest Health Workshop, Vancouver, Canada (oral presentation).

64. Ralph S (2006) Expressed spruce genome and functions in conifer defense: Phenolic defenses. 1st annual Treenomix Conifer Forest Health Workshop, Vancouver, Canada (oral presentation).

63. Holliday J, Ralph S, Bohlmann J and Aitken S (2006) Integrating population, quantitative and molecular genetics: adaptive variation in cold tolerance in Sitka spruce (Picea sitchensis). 51st Western Forest Genetics Association annual meeting, Anchorage, USA (oral presentation).

Abstracts and conference presentations (continued)

62. Külheim C, Philippe RN, Ralph S, Lippert D and Bohlmann J (2006) Tree-insect herbivore interactions – a “gift” from the plant. 8th International Congress of Plant Molecular Biology, Adelaide, Australia (poster presentation).

61. Lippert D, Chowrira S, Ralph SG, Aeschliman D, Zhuang J, Ritland C, Ritland K and Bohlmann J (2006) Conifer defense against insects: Proteome analysis of Sitka spruce (Picea sitchensis) induced by mechanical wounding or feeding by white pine weevils (Pissodes strobi). 7th Siena Meeting from Genome to Proteome: Back to the Future, Siena, Italy (poster presentation).

60. Ralph SG, Hudgins JW, Jancsik S, Madilao LL and Bohlmann J (2006) Functional genomics approaches to characterize the contribution of phenolic secondary metabolites to insect induced defenses in conifer trees. 41st Annual meeting of the Phytochemical Society of North America, Oxford, USA (oral presentation, Neish Award lecture) .

59. Kolosova N, Ralph S, Zhuang J, Breuil C and Bohlmann J (2006) Discovery of the dynamics of lodgepole pine

transcriptional response to mountain pine beetle-vectored fungus (Ophiostoma clavigerum) using interspecies application of genomics tools. 4th Canadian Plant Genomics Workshop, Ottawa, Canada (poster presentation).

58. Hudgins JW, Ralph SG, Jancsik S, Madilao LL and Bohlmann J (2006) Functional genomics approaches to characterize the contribution of phenolic secondary metabolites to insect induced defenses in conifer trees. International Symposium in Memory of Vincent R. Franceschi, Pullman, USA (oral presentation).

57. Philippe RN, Ralph SG, Jancsik S, Aeschliman D, White R and Bohlmann J (2006) Genomics of hybrid poplar (Populus trichocarpa x deltoides) interacting with forest tent caterpillars (Malacosoma disstria): Contrasting local and systemic responses to insect attack. 4th annual Genome British Columbia Forum, Vancouver, Canada (poster presentation).

56. Ralph S, Yueh H, Jancsik S, Oddy C, Ritland C, White R, Kirkpatrick R, Wynhoven B, Chun E, Palmquist D, Siddiqui A, Jones S, Marra M, Ritland K and Bohlmann J (2006) Characterization of insect induced defenses in spruce using functional genomics approaches. Plant and Animal Genomes XIV, San Diego, USA (oral presentation).

55. Ritland K, Zhuang J, Ralph S, Ritland C and Bohlmann J (2006) Comparative conifer genomics and the new "Treenomix" program. Plant and Animal Genomes XIV, San Diego, USA (oral presentation).

54. Lippert D, Chowrira S, Ralph S, Ehlting J and Bohlmann J (2005) The intricacies and incentives of high-throughput proteomics in its application to tree biology. IUFRO Tree Biotechnology 2005, Pretoria, South Africa (oral presentation).

53. Harris N, Cottrell J, Lee S, Ralph S, Bohlmann J, Jancsik S, Stewart D and Taylor G (2005) Elucidating the genetic nature of wood quality in Sitka spruce – from microarray to field. IUFRO Tree Biotechnology 2005, Pretoria, South Africa (poster presentation).

52. Holliday JA, Ralph S and Aitken SN (2005) Functional and population genomics of cold acclimation in Picea sitchensis. IUFRO Tree Biotechnology 2005, Pretoria, South Africa (oral presentation).

51. Ralph S, Yueh H, Rueffer K, Leung G, Jancsik S, Kolosova N, Ritland K and Bohlmann J (2005) Transcriptional response of weevil induced defenses in Sitka spruce. 3rd Canadian Plant Genomics Workshop, Saskatoon, Canada (oral presentation).

50. Miranda M, Ralph S, Bohlmann J and Constabel CP (2005) The transcriptional response of hybrid poplar to infection by Melampsora leaf rust. 3rd Canadian Plant Genomics Workshop, Saskatoon, Canada (oral presentation).

Abstracts and conference presentations (continued)

49. Ralph S, Philippe RN, Jancsik S and Bohlmann J (2005) Exploring large-scale transcriptional responses in hybrid poplar to herbivory by forest tent caterpillars: Genome organization, cDNA cloning and gene expression of a Kunitz trypsin inhibitor family. Plant Canada 2005, Edmonton, Canada (oral presentation).

48. Kolosova N, Ralph S and Bohlmann J (2005) Genomics discovery of lodgepole pine defense mechanisms against the mountain pine beetle-vectored fungal pathogen (Ophiostoma clavigerum) and evaluation of a new conifer microarray chip for gene expression profiling across the pine family. Plant Canada 2005, Edmonton, Canada (oral presentation).

47. Kolosova N, Ralph S, Breuil C and Bohlmann J (2005) Genomics discovery of lodgepole pine defense mechanisms against the mountain pine beetle-vectored fungal pathogen (Ophiostoma clavigerum). IUFRO Forest Insect Epidemics, Prince George, Canada (oral presentation).

46. Lane AW, Ralph S, Bohlmann J and Ellis B (2005) Heterologous hybridization of Picea microarrays. American Society of Plant Biology annual meeting, Seattle, USA (poster).

45. Bohlmann J, Aeschliman D, Arimura G, Chowrira G, Douglas C, Ellis B, Huber D, Jancsik S, Keeling C, Kolosova N, Lippert D, Madilao L, Martin D, Miller B, Oddy C, Philippe R, Ralph S, Ritland C, Ritland K, Ro DK, Roberts J and

Yueh H (2005) Forest health genomics: Insect-induced defenses in spruce and poplar. Plant and Animal Genomes XIII, San Diego, USA (oral presentation).

44. Douglas CJ, Ralph S, Friedmann M, Kelleher C, Lippert D, Chowrira G, Ehlting J, Aeschliman D, Ellis M, Zhuang J, Ritland K and Bohlmann J (2005) Comparative genomics of fiber development and response to herbivory in poplar and Arabidopsis. Plant and Animal Genomes XIII, San Diego, USA (oral presentation).

43. Ralph S (2005) Exploring large-scale transcriptional responses in hybrid poplar to herbivory by forest tent caterpillars: Genome organization, cDNA cloning and gene expression of a Kunitz trypsin inhibitor family. Michael Smith Laboratories Colloquia, Vancouver, Canada (oral presentation).

42. Ralph S, Rungis D, Chowrira G, Lippert D, Aeschliman D, Yueh H, Jancsik S, Oddy C, Rueffer K, Friedmann M, Bérubé Y, Zhuang J, Ritland C, Cullis I, Zeznik J, Nelson C, Nantel A, Rigby T, Butterfield Y, Kirkpatrick R, Stott J, Yang G, Siddiqui A, Jones S, Marra M, Olafson R, Mansfield S, Ellis B, Ritland K, Douglas C and Bohlmann J (2004) The Treenomix project: A multifaceted approach to insect herbivory in spruce and poplar. 12th New Phytologist Symposium, Functional Genomics of Environmental Adaptation in Populus, Gatlinburg, USA (poster).

41. Philippe RN, Ralph S, Jancsik S and Bohlmann J (2004) Quantitative expression of Kunitz-type protease inhibitors in Malacosoma disstria-attacked poplar: A microarray and real-time PCR approach. 12th New Phytologist Symposium, Functional Genomics of Environmental Adaptation in Populus, Gatlinburg, USA (poster).

40. Bohlmann J, Arimura GI, Fäldt J, Godard K, Huber D, Kolosova N, Martin DM, Miller B, Philippe R, Ralph S, Ro DK and Robert J (2004) Biochemistry and functional genomics of herbivore-induced defenses in spruce and poplar. Joint conference; 20th annual meeting of the International Society of Chemical Ecology and the 39th annual meeting of the Phytochemical Society of North America, Ottawa, Canada (oral presentation).

39. Yu J, Meng Y, Taniguchi M, Hansen C, Ralph S, Bohlmann J and Moore SS (2004) Full-length bovine cDNA library construction. Canadian Society of Animal Genetics, Edmonton, Canada (poster).

38. Yu J, Meng Y, Taniguchi M, Hansen C, Ralph S, Bohlmann J and Moore SS (2004) Full-length bovine cDNA libraries: A development of library construction strategies. 29th International Conference on Animal Genetics, Tokyo, Japan (poster).

Abstracts and conference presentations (continued)

37. Bohlmann J, Ralph S, Kelleher C, Yueh H, Jancsik S, Oddy C, Marra M, Schein J, Holt R, Jones S, Siddiqui A, Butterfield Y, Kirkpatrick R, Ritland C, Douglas C, Ellis BE and Ritland K (2004) Canada's contribution to the international poplar genome sequencing project and mining for insect-defense genes in the poplar genome. Understanding Poplar: From Genes to Functions. Poplar Symposium sponsored by the German Science Foundation, Göttingen, Germany (oral presentation).

36. Kirkpatrick R, Ralph S, Liu J, Palmquist D, Butterfield Y, Stott J, Babakaiff R, Barber S, Brown-John M, Chand S, Cloutier A, Featherstone R, Girn N, Lee D, Masson A, Mayo M, Moran J, Olson T, Prabhu A, Tsai M, Yang G, Cooper D, Gunter L, Tuskan J, Bohlmann J, Ritland K, Ellis B, Douglas C, Siddiqui A, Holt R, Jones S and Marra M (2004) Gene discovery in poplar. The Biology of Genomes Conference, Cold Spring Harbor, New York, USA (poster).

35. Oddy C, Jancsik S, Yueh H, Rueffer K, Ralph S, Aeschliman D, Ritland C, Kolosova N, Friedmann M, Stott J, Yang G, Holt R, Butterfield Y, Kirkpatrick R, Liu J, Palmquist D, Siddiqui A, Jones S, Marra M, Nelson C, Tessier D, Douglas C, Ellis B, Ritland K and Bohlmann J (2004) Functional genomics in spruce and poplar: Towards understanding plant-herbivore interactions. 2nd annual Genome British Columbia Forum, Vancouver, Canada (poster).

34. Bohlmann J, Lücker J, Martin D, Miller B, Ralph S and Ro DK (2004) Mining plant genomes for terpenoid

pathway enzymes. 228th American Chemical Society annual meeting, Philadelphia, USA (oral presentation).

33. Rungis D, Bérubé Y, Zhuang J, Ralph S, Ellis BE, Douglas C, Bohlmann J and Ritland K (2004) Development and mapping of EST-SSRs and SNPs in spruce. Plant and Animal Genomes XII, San Diego, USA (oral presentation).

32. Rungis D, Zhuang J, Bérubé Y, Ralph S, Kolosova N, Cooper D, Mattheus N, Oddy C, Ritland C, Jones S, Marra M, Douglas C, Ellis B, Bohlmann J and Ritland K (2004) Comparative genomics of EST-SSR markers and demonstration of their use in spruce. Plant and Animal Genomes XII, San Diego, USA (poster).

31. Ritland K, Zhuang J, Ralph S, Douglas C, Ellis BE and Bohlmann J (2004) Patterns of nucleotide variation for ESTs in conifer and angiosperm tree taxa. Population, Evolutionary and Ecological Genomics of Forest Trees, Pacific Grove, USA (oral presentation).

30. Rungis D, Zhuang J, Bérubé Y, Wilkin J, Ralph S, Douglas C, Ellis BE, Bohlmann J and Ritland K (2004) Development of EST-based DNA markers in Picea. Population, Evolutionary and Ecological Genomics of Forest Trees, Pacific Grove, USA (oral presentation).

29. Ralph S (2004) Functional genomics in Picea and Populus: Towards understanding plant-herbivore interactions. 2nd annual Genome British Columbia Forest Genomics Workshop at the Poplar Council of Canada annual meeting, Vancouver, Canada (oral presentation).

28. Ralph S, Rungis D, Lippert D, Friedmann M, Zhuang J, Kolosova N, Cooper D, Mattheus N, Bérubé Y, Ritland C, Olafson R, Jones S, Marra M, Nelson C, Douglas C, Ellis BE, Ritland K and Bohlmann J (2003) Deciphering the spruce genome: Tools for functional genomics and genome-wide marker development. Tree Biotechnology 2003, Umeå, Sweden (oral presentation).

27. Ralph S, Friedmann M, Kolosova N, Cooper D, Mattheus N, Oddy C, Zhuang J, Ritland C, Aeschliman D, Jones S, Marra M, Nelson C, Douglas C, Ellis BE, Ritland K and Bohlmann J (2003) Functional genomics in spruce and poplar: Towards understanding plant-herbivore interactions. Tree Biotechnology 2003, Umeå, Sweden (poster).

Abstracts and conference presentations (continued)

26. Douglas C, Ehlting J, Gilchrist E, Ralph S, Lippert D, Friedmann M, Zhuang J, Kolosova N, Cooper D, Mattheus N, Ritland C, Savidge R, Haughn G, Olafson R, Schein J, Jones S, Marra M, Nelson C, Bohlmann J, Ellis B and Ritland K (2003) Genomics approaches to wood development and phenylpropanoid metabolism. Tree Biotechnology 2003, Umeå, Sweden (oral presentation).

25. Bohlmann J, Godard K, Huber D, Martin D, Miller B, Philippe R, Ralph S and Ro D (2003) Terpenoid biochemistry and gene discovery in conifers. Tree Biotechnology 2003, Umeå, Sweden (oral presentation).

24. Ralph S, Cooper D, Kolosova N, Mattheus N and Oddy C (2003) Spruce and poplar libraries, EST database and full-length cDNAs. 1st annual Genome British Columbia Forest Genomics Workshop at the 48th Western Forest Genetics Association annual meeting, Whistler, Canada (oral presentation).

23. Friedmann M and Ralph S (2003) Spruce and poplar microarrays: Development and applications. 1st annual Genome British Columbia Forest Genomics Workshop at the 48th Western Forest Genetics Association annual meeting, Whistler, Canada (oral presentation).

22. Zhuang J, Rungis D, Bérubé Y, Ralph S, Kolosova N, Cooper D, Mattheus N, Oddy C, Ritland C, Jones S, Marra M, Douglas C, Ellis BE, Ritland K and Bohlmann J (2003) Development of bioinformatics tools for the analysis of EST databases. 48th Western Forest Genetics Association annual meeting, Whistler, Canada (poster).

21. Rungis D, Bérubé Y, Zhuang J, Ralph S, Kolosova N, Cooper D, Mattheus N, Oddy C, Ritland C, Jones S, Marra M, Douglas C, Ellis BE, Ritland K and Bohlmann J (2003) Development of SSR markers in Picea. 48th Western Forest Genetics Association annual meeting, Whistler, Canada (poster).

20. Bohlmann J, Arimura G, Fäldt J, Godard K, Gretes M, Huber D, Martin D, Martz S, Miller B, Philippe R, Ralph S and Ro D (2003) Functional genomics in spruces and poplars: A case study on terpenoids, volatile emissions, direct and indirect defense. 48th Western Forest Genetics Association annual meeting, Whistler, Canada (oral presentation).

19. Ralph S, Kolosova N, Zhuang J, Cooper D, Butterfield Y, Kirkpatrick R, Ritland C, Bosdet I, Mathewson C, Wye N, Stott J, Yang G, Smailus D, Asano J, Barber S, Chan S, Chiu R, Cloutier A, Fjell C, Flibotte S, Girn N, Guin R, Leach S, Lee D, Lee S, Olson T, Pandoh P, Prabhu A, Saeedi P, Shin H, Spence L, Tsai M, Schein J, Jones S, Marra M, Nelson C, Douglas C, Ellis B, Ritland K and Bohlmann J (2003) Structural and functional approaches to deciphering the spruce and poplar genomes. Plant and Animal Genomes XI, San Diego, USA. (oral presentation).

18. Lippert DN, Chowrira G, Arimura G, Ralph S, Friedmann M, Olafson B, Ritland K, Douglas C, Ellis B and Bohlmann J (2003) Analysis of herbivore response mechanisms in a variety of plant species. 2nd annual Human Proteome Organization & International Union of Biochemistry and Molecular Biology Joint World Congress, Montreal, Canada (poster).

17. Ralph S, Kolosova N, Zhuang J, Cooper D, Butterfield Y, Kirkpatrick R, Ritland C, Bosdet I, Mathewson C, Wye N, Stott J, Yang G, Smailus D, Asano J, Barber S, Chan S, Chiu R, Cloutier A, Fjell C, Flibotte S, Girn N, Guin R, Leach S, Lee D, Lee S, Olson T, Pandoh P, Prabhu A, Saeedi P, Shin H, Spence L, Tsai M, Schein J, Jones S, Marra M, Nelson C, Douglas C, Ellis B, Ritland K and Bohlmann J (2002) Structural and functional approaches to deciphering the spruce and poplar genomes. 1st Plant Genomics European Meeting, Berlin, Germany (poster).

16. Ralph S, Kolosova N, Douglas C, Ellis B, Jones S, Ritland K, Marra M and Bohlmann J (2002) Development of an inventory of expressed sequence tags in spruce and poplar. Canadian Society of Plant Physiologists annual meeting, Calgary, Canada (oral presentation).

Abstracts and conference presentations (continued)

15. Guan Y, Ralph S, Ling V and Hogge D (2001) Polyclonal normal hematopoietic progenitors in patients with acute myeloid leukemia (AML). 43rd American Society of Hematology Meeting, Orlando, USA (poster).

14. Sheps J, Ralph S, Baillie D and Ling V (2001) The ABC transporter gene family in eukaryotic genomes. 2001 FASEB Summer Research Conference, Colorado, USA (poster).

13. Ralph S, Ishkanian A, Mallof C, Garnis C, Kasteel K, Ling V, Marra M and Lam W (2001) Genome-wide analysis of DNA copy number changes using BAC arrays. Pathology Day Gala, Centre for Molecular Medicine & Therapeutics, Vancouver, Canada (poster).

12. Pahl A, Ralph S and Ling V (2001) RNA expression profiles of the human ABC transporter family in human tissues, MDR cancer cell lines and after short-term exposure to chemotherapeutic drugs. 3rd FEBS Advanced Lecture Course: ATP Binding Cassette Transporters, Gosau, Austria (oral presentation).

11. Ralph S, Pahl A and Ling V (2000) mRNA expression analysis of the ABC transporter family in multidrug resistant cancer cell lines using a quantitative-competitive-RT-PCR assay. 91st Annual Meeting of the American Association for Cancer Research, San Francisco, USA (poster).

10. Hung JY, Cheng JS, Ralph S, English J and Ling V (2000) Quantification of MDR1, MRP1, and GST-π gene expression levels in smokers with and without bronchial dysplasia or cancer. 9th World Conference on Lung Cancer, Tokyo, Japan (poster).

9. Ralph S, Pahl A and Ling V (2000) RNA expression profiling of the human ABC transporter family in multidrug-resistant cell lines and normal tissues. UBC Faculty of Medicine Golden Jubilee, Vancouver, Canada (poster).

8. Pahl A, Ralph S and Ling V (2000) RNA expression profiles of the ABC transporter family after short-term exposure to chemotherapeutic drugs in the human HL-60 leukemic cell line. UBC Faculty of Medicine Golden Jubilee, Vancouver, Canada (poster).

7. Siwoski A, Ishkanian A, Mallof C, Ralph S and Lam W (2000) High resolution genome scanning of minute specimens. UBC Faculty of Medicine Golden Jubilee, Vancouver, Canada (poster).

6. Siwoski A, Ishkanian A, Mallof C, Ralph S and Lam W (2000) Genome wide scanning of minute specimens: High resolution DNA fingerprinting. 6th Bridging the Straits of Georgia Conference, Victoria, Canada (poster).

5. Pahl A, Ralph S and Ling V (1999) Global mRNA expression analysis of ABC transporters in multidrug resistant cancer using a quantitative-competitive-RT-PCR assay. 5th Bridging the Straits of Georgia Conference, Victoria, Canada (poster).

4. Ralph S and Ling V (1999) Global expression analysis of the ABC superfamily using a quantitative-competitive-RT-PCR assay. 2nd FEBS Advanced Lecture Course: ATP Binding Cassette Transporters, Gosau, Austria (poster).

3. Ralph S and Ling V (1998) Global expression analysis of the ABC superfamily using a quantitative-competitive-RT-PCR assay. Membrane Proteins in Health and Disease, 8th Fisher Winternational Symposium on Cellular and Molecular Biology, Banff, Canada (poster).

2. Ralph S and Petras M (1995) Monitoring small bodies of water with single cell gel DNA electrophoresis (SCDE) in tadpoles. Environmental Mutagen Society Annual Meeting, St. Louis, USA (poster).

1. Pandrangi R, Ralph S, Perry K, Vrzoc M and Petras M (1994) Monitoring genetic damage in two species of fish. Annual Aquatic Toxicity Workshop, Sarnia, Canada (poster).