

## Saunders CV 2005 – present.

### Academic appointments:

Canada's Lead Delegate, iBOL Scientific Steering Committee	2008 - 2012
Chair Dept. of Biology	2005 - 2008
Canadian Barcode of Life Network Protist Diversity Program Leader	2005 - 2009
Research Professor, University of New Brunswick	2003 - present
Coordinator, Centre for Environmental & Molecular Algal Research	2001 - present
Director & Algal Curator, Connell Memorial Herbarium	1999 - present
Canada Research Chair in Molecular Systematics & Biodiversity	2001 - 2011

### Society duties

Executive Council (Member at Large), Northeast Algal Society	2007 - 2009
Executive Council (President), Northeast Algal Society	2004 - 2006
Feldman Fund Committee, Phycological Society of America	2004 - present
Associate Editor, Canadian Journal of Botany	1999 - 2008
Editorial Board, European Journal of Phycology	1999 - present
Treasurer, International Society for Evolutionary Protistology	1995 - 2006

### Invited presentations (bold = presenter)

- Australasian Society for Phycology & Aquatic Botany. Perth, Australia. 2010. **Plenary lecture.** ALGA – iBOL's Algal Life Global Audit: muddled morphologies & molecular mayhem in the topsy-turvy world of algal floristics. **Saunders, G.W.**
- Canadian Botanical Association Annual Meeting. Ottawa, ON. 2010. Acquiring DNA sequence data from dried archival (type) red algal collections for the purpose of applying specific epithets to contemporary molecular species: a critical assessment Saunders, G.W. & **McDevit, D.C.**
- Invasive Species Workshop, 3<sup>rd</sup> International Barcode of Life Conference, Mexico. 2009. DNA barcoding reveals cryptic invasive seaweeds in Canadian coastal waters. **Saunders, G.W.**
- Canadian Botanical Association Annual Meeting. Acadia, NS. 2009. **Plenary lecture.** Molecules versus morphologies – a contemporary floristic survey of Canadian seaweeds. **Saunders, G.W.**
- 48<sup>th</sup> Northeast Algal Symposium. Dartmouth, MA. 2009. **Special Invited Paper.** The promises and pitfalls of molecular-assisted alpha taxonomy. **Saunders, G.W.**
- Hokkaido University Coastal Biodiversity Symposium, Sapporo. 2008. Molecular methods bring order to the morphological mayhem of marine macroalgae. **Saunders, G.W.**
- New Brunswick Invasive Plants Workshop, Fredericton, NB. 2008. Genetic (DNA) barcoding and the identification of invasive algae. **Saunders, G.W.**
- Canadian Barcode of Life Network 2<sup>nd</sup> Annual Meeting, Toronto. 2008. Macroalgal systematics & biodiversity in the age of DNA barcoding: a biological renaissance. **Saunders, G.W.**
- Seminar, Saint John Naturalists Society, Saint John, NB. 2007. Seaweed diversity & decline in Canada's oceans with emphases on the Bay of Fundy. **Saunders, G.W.**
- Alumnus Appreciation Seminar, Biological Sciences, Simon Fraser, BC. 2007. Muddled morphologies mask molecular mayhem in the topsy-turvy world of seaweed phylogenetics & floristics. **Saunders, G.W.**
- Joint Phycological Society of America & International Society of Protozoologists Congress, Providence, Rhode Island. 2007. Marine macroalgae as an exemplar of DNA barcoding among

protistan lineages challenges widely held perspectives in biodiversity and biogeography.

**Saunders, G.W.**

4<sup>th</sup> European Phycological Congress, Oviedo, Spain. 2007. Exposing cryptic diversity in the Canadian macroalgal flora through DNA barcoding. **Saunders, G.W.**

International Barcode of Life 1<sup>st</sup> Organizational Meeting, Guelph. 2007. DNA barcoding of protists: macroalgae as an example. **Saunders, G.W.**

Canadian Barcode of Life Network 1<sup>st</sup> Annual Meeting, Guelph. 2007. Macroalgal systematics & biodiversity in the age of DNA barcoding: a biological renaissance. **Saunders, G.W.**

Biodiversity Discovery Corridor Workshop, Department of Fisheries & Oceans, St. Andrews, NB. 2007. A DNA barcoding perspective on the biodiversity & biogeography of marine macroalgae in Canadian waters. **Saunders, G.W.**

Seminar Dipartimento di Scienze Botaniche, Università di Messina, Italy. 2007. Molecular tools - the expanding frontier of marine algal biodiversity & biogeography. **Saunders, G.W.**

Seminar Department of Biology, Mount Allison, NB. 2006. The impact of molecular tools on red algal phylogeny and floristics. **Saunders, G.W.**

Seminar Department of Fisheries & Oceans, Moncton, NB. 2006. Using DNA barcodes to expose macroalgal diversity in Canadian waters. **Saunders, G.W.**

Seminar Fredericton Botanical Society, Fredericton, NB. 2005. Algal diversity & decline in the Bay of Fundy. **Saunders, G.W.**

Seminar UNBSJ Marine Semester Series at Huntsman, St. Andrews, NB. 2005. A red algal perspective on floristics, genetic barcoding and environmental degradation in the Bay of Fundy. **Saunders, G.W.**

Seminar Series Dept. of Environmental & Plant Biology, Ohio University, Athens, Ohio. 2005. Phylogenetics, Floristics and Fundy: a red algal perspective. **Saunders, G.W.**

Canadian Institute for Advanced Research Microbial Biodiversity Workshop, Vancouver, BC. 2005. Confounding species concepts among red algae: morphology versus molecules. **Saunders, G.W.**

NRC-IIT Advanced Networks Day, Wu Centre, Fredericton, NB. 2005. Computer networks and the Canadian Barcode of Life Network. **Saunders, G.W.**

Barcoding of Life: Scientific Conference, Natural History Museum, London, UK. 2005.

Applying *coxI*-based genetic barcoding to macroalgae of the subkingdom Rhodophyta (and other under appreciated protists): a preliminary appraisal holds promise for future applications. **Saunders, G.W.**

Seminar, UNBSJ, Saint John, NB. 2005. Phylogenetics, Floristics and Fundy: a red algal perspective. **Saunders, G.W.**

#### **Publications (bold = HQP co-authors)**

**Hamsher, S.E.**, Evans, K.M., Mann, D.G. 2011. Poulícková, A. & Saunders, G.W. Barcoding diatoms: exploring alternatives to COI-5P. *Protist* in press.

Saunders, G.W. & Clayden, S.L. 2010. Providing a valid epithet for the species widely known as *Halosaccicolax kjellmanii* S. Lund (Palmariales, Rhodophyta) – *Rhodophysema kjellmanii* sp. nov. *Phycologia* in press.

Saunders, G.W. & **McDonald, B.** 2010. DNA barcoding reveals multiple overlooked Australian species of the red algal order Rhodymeniales (Florideophyceae), with resurrection of *Halopeltis* J. Agardh and description of *Pseudohalopeltis* gen. nov. *Botany* 88: 637-665.

**Clayden, S.L.** & Saunders, G.W. 2010. Recognition of *Rubrointrusa membranacea* gen. et comb. nov., *Rhodonematella subimmersa* gen. et comb. nov. (with a re-interpretation of the life

- history) and the Meiodiscaceae fam. nov. within the Palmariales (Rhodophyta). *Phycologia* 49: 283-300.
- McDevit, D.C.** & Saunders, G.W. 2010. A DNA barcode examination of the Laminariaceae (Phaeophyceae) in Canada reveals novel biogeographical and evolutionary insights. *Phycologia* 49: 235-248.
- Le Gall, L.** & Saunders, G.W. 2010. DNA barcoding is a powerful tool to uncover algal diversity: a case study of the Phylloporaceae (Gigartinales, Rhodophyta) in the Canadian flora. *J. Phycol.* 46: 374-389.
- Clarkston, B.E.** & Saunders, G.W. 2010. A comparison of two DNA barcode markers for species discrimination in the red algal family Kallymeniaceae (Gigartinales) with a description of *Euthora timburtonii*. *Botany* 88: 119-131.
- Verbruggen, H., Maggs, C.A., Saunders, G.W., Le Gall, L., Yoon, H-S. & De Clerck, O. 2010. Red algal tree of life: data mining approach identifies certainties and future research priorities and data requirements. *BMC Evolutionary Biology* 10: 16 (<http://www.biomedcentral.com/1471-2148/10/16>).
- Schneider, C.W., **Lane, C.E.** & Saunders, G.W. 2010. Notes on the marine algae of the Bermudas. 11. More additions to the benthic flora and a phylogenetic assessment of *Halymenia pseudofloresii* (Halymeniales, Rhodophyta) from its type locality. *Phycologia* 49: 154-168. **(cover article)**
- Bates, C.R.**, Saunders, G.W. & Chopin, T. 2009. Historical versus contemporary measures of seaweed biodiversity in the Bay of Fundy. *Botany* 87: 1066-1076.
- Le Gall, L.**, Payri, C., Bittner, L. & Saunders, G.W. 2009. Multigene phylogenetic analyses support recognition of the Sporolithales ord. nov. *Mol. Phylogenet. Evol.* 54: 302-305.
- Pueschel, C.M. & Saunders, G.W. 2009. *Ramicrusta textilis* sp. nov. (Peyssonneliaceae, Rhodophyta), an anatomically complex Caribbean alga that overgrows corals. *Phycologia* 48: 480-491. **(cover article)**
- McDevit, D.C.** & Saunders, G.W. 2009. On the utility of DNA barcoding for species differentiation among brown macroalgae (Phaeophyceae) including a novel extraction protocol. *Phycol. Res.* 57: 131-141.
- Saunders, G.W. 2009. Routine DNA barcoding of Canadian Gracilariales (Rhodophyta) reveals the invasive species *Gracilaria vermiculophylla* in British Columbia. *Molec. Ecol. Res.* 9 (Suppl. 1): 140-150.
- Le Gall, L.**, **Dalen, J.L.** & Saunders, G.W. 2008. Phylogenetic analyses of the red algal order Rhodymeniales supports recognition of the Hymenocladaceae, fam. nov., Fryeellaceae fam. nov., and *Neogastroclonium* gen. nov. *J. Phycol.* 44: 1556-1571.
- Kucera, H.** & Saunders, G.W. 2008. Assigning morphological variants of *Fucus* (Fucales, Phaeophyceae) in Canadian waters to recognized species using DNA barcoding. *Botany* 86: 1065-1079.
- Choi, H-G.**, Kraft, G.T., Kim, H-S., Guiry, M.D. & Saunders, G.W. 2008. Phylogenetic relationships among lineages of the Ceramiaceae (Ceramiiales, Rhodophyta) based on nuclear small subunit rDNA sequence data. *J. Phycol.* 44: 1033-1048.
- Saunders, G.W. 2008. A DNA barcode examination of the red algal family Dumontiaceae in Canadian waters reveals substantial cryptic species diversity. 1. The foliose *Dilsea-Neodilsea* complex and *Weeksia*. *Botany* 86: 773-789. **(shared cover article)**
- Clayden, S.** & Saunders, G.W. 2008. Resurrecting the red algal genus *Grania* within the order Acrochaetiales (Florideophyceae, Rhodophyta). *Eur. J. Phycol.* 43: 151-160.
- West, J.A., Scott J.L., West, K.A., Karsten, U., **Clayden, S.L.** & Saunders, G.W. 2008. *Rhodachlya madagascarensis* gen et sp. nov.: a distinct acrochaetioid represents a new order

- and family (Rhodachlyales ord. nov., Rhodachlyaceae fam. nov.) of the Florideophyceae (Rhodophyta). *Phycologia* 47: 203-212.
- Phillips, N.**, Burrowes, R., Rousseau, F., de Reviere, B. & Saunders, G.W. 2008. Resolving evolutionary relationships among the brown algae using chloroplast and nuclear genes. *J. Phycol.* 44: 394-405.
- Randhawa, H.S.**, Saunders, G.W., Scott, M.E. & Burt, M.D. 2008. Redescription of *Pseudanthobothrium hansenii* Baer, 1956 and description of *P. purtoni* n. sp. (Cestoda: Tetrephyllidea) from different pairs of rajid skate hosts, with comments on the host specificity of the genus in the northwest Atlantic. *Systematic Parasitology* 70: 41-60.
- Ballantine, D.L. Saunders, G.W. & Ruiz, H. 2007. *Halichrysis corallinarius* sp. nov. (Rhodymeniaceae, Rhodophyta) from Puerto Rico, Caribbean Sea. *Phycol. Res.* 55: 240-248.
- Randhawa, H.S.**, Saunders, G.W. & Burt, M.D. 2007. Establishing of the onset of host specificity in four phyllobothrid tapeworm species (Cestoda: Tetrephyllidea) using a molecular approach. *Parasitology* 134: 1291-1300.
- Lane, C.E.**, Lindstrom, S. & Saunders, G.W. 2007. A molecular assessment of northeast Pacific *Alaria* species (Laminariales, Phaeophyceae) with reference to the utility of DNA barcoding. *Mol. Phylogenet. Evol.* 44: 634-648.
- Saunders, G.W., Wilkes, R.J. & Guiry, M.D. 2007. Note. A nuclear small-subunit ribosomal DNA perspective on the taxonomic affinities of *Maripelta* (Rhodymeniales, Rhodophyta). *Cryptogam. Algol.* 28: 191-194.
- Le Gall, L.** & Saunders, G.W. 2007. A nuclear phylogeny of the Florideophyceae (Rhodophyta) inferred from combined EF2, small subunit and large subunit ribosomal DNA: establishing the new red algal subclass Corallinophycidae. *Mol. Phylogenet. Evol.* 43: 1118-1130.
- Dalen, J.L.** & Saunders, G.W. 2007. A review of the red algal genus *Leptofaucha* (Faucheaceae, Rhodymeniales) including a description of *L. chiloensis* sp. nov. *Phycologia* 46: 198-213.
- Vis, M.L., **Harper, J.T.** & Saunders, G.W. 2007. Large subunit rDNA and *rbcL* gene sequence data place *Petrohua bernabei* gen. et sp. nov. in the Batrachospermales (Rhodophyta), but do not provide further resolution among taxa in this order. *Phycol. Res.* 55: 103-112.
- Saunders, G.W., **Lane, C.E.**, Schneider, C.W. & Kraft, G.T. 2006. Unraveling the *Asteromenia peltata* species complex with clarification of the genera *Halichrysis* and *Drouetia* (Rhodymeniaceae, Rhodophyta). *Can. J. Bot.* 84: 1581-1607. **(cover article)**
- Withall, R.D.** & Saunders, G.W. 2006. Combining small and large subunit ribosomal DNA genes to resolve relationships among orders of Rhodymeniophycidae (Rhodophyta): recognition of the Acrosymphytales ord. nov. and Sebdeniales ord. nov. *Eur. J. Phycol.* 41: 379-394.
- Saunders, G.W. & **Withall, R.D.** 2006. Collections of the invasive species *Grateloupia turuturu* (Halymeniales, Rhodophyta) from Tasmania, Australia. *Phycologia* 45: 711-714.
- Lane, C.E.**, Mayes, C., Druehl, L.D. & Saunders, G.W. 2006. A multi-gene molecular investigation of the kelp (Laminariales, Phaeophyceae) supports substantial taxonomic re-organization. *J. Phycol.* 42: 493-512. **(cover article)**
- Schneider, C.W., **Lane, C.E.** & Saunders, G.W. 2006. *Crassitegula walsinghamii* (Sebdeniaceae, Halymeniales), a new red algal genus and species from Bermuda based on morphology and SSU rDNA sequence analyses. *Eur. J. Phycol.* 41: 115-124.
- Lane, C.E.** & Saunders, G.W. 2005. Molecular investigation reveals epi/endophytic extrageneric kelp (Laminariales, Phaeophyceae) gametophytes colonizing *Lessoniopsis littoralis* thalli. *Bot. Mar.* 48: 426-436.

- Saunders, G.W. 2005. Applying DNA barcoding to red macroalgae: a preliminary appraisal holds promise for future applications. *Phil. Trans. R. Soc. B* 360: 1879-1888.
- Saunders, G.W. & **Lehmkuhl, K.V.** 2005. Molecular divergence and morphological diversity among four cryptic species of *Plocamium* (Plocamiales, Florideophyceae) in northern Europe. *Eur. J. Phycol.* 40: 293-312.
- Bates, C.R.**, Saunders, G.W. & Chopin, T. 2005. An assessment of two taxonomic distinctness indices for detecting seaweed assemblage responses to environmental stress. *Bot. Mar.* 48: 231-243.
- Druehl, L.D., Collins, J.D., **Lane, C.E.** & Saunders, G.W. 2005. A critique of intergeneric kelp hybridization protocol, employing Pacific Laminariales (Phaeophyceae). *J. Phycol.* 41: 250-262.

### Book Chapters

- Saunders, G.W. & Andersen, R.A. Heterokontophyta: Pelagophyceae. 2007. In: *Algae of Australia, Introduction*. (P.M. McCarthy & A.E. Orchard, eds.). Australian Biological Resource Study, Canberra. pp. 228-234.
- Huisman, J.M. & Saunders, G.W. 2007. Phylogeny and classification of the algae. In: *Algae of Australia, Introduction*. (P.M. McCarthy & A.E. Orchard, eds.). Australian Biological Resource Study, Canberra. pp. 66-103.
- Huisman, J.M., Saunders, G.W. & Sherwood, A.R. 2006. *Titanophycus*, in Huisman, J.M., *Algae of Australia: Nemaliales*. pp. 81-83. ABRS, Canberra; CSIRO Publishing.
- Huisman, J.M., Saunders, G.W. & Sherwood, A.R. 2006. Recognition of *Titanophycus*, a new genus based on *Liagora valida* Harv. (Liagoraceae, Nemaliales), in Huisman, J.M., *Algae of Australia: Nemaliales*. pp. 116-119. ABRS, Canberra; CSIRO Publishing.
- Lane, C.E.** & Saunders, G.W. 2005. Brown algae. *Encyclopedia of Life Sciences*, Macmillan Reference Limited, Stockton Press, London. Available on the Web, ELS ([www.els.net](http://www.els.net)).