

Katharine R. Hind

Senior Laboratory Instructor

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EDUCATION

2012 PhD, Biology, University of New Brunswick

Systematics of coralline algae (Corallinales, Rhodophyta).

2011 Diploma in University Teaching, University of New Brunswick

Education diploma focused on adult learning, teaching techniques and learning theory.

2003 Bachelor of Science, Double Major, Biology/Anthropology, University of Victoria

Courses in genetics, marine biology, animal and plant physiology, plant biochemistry, human evolutionary ecology, ethnobotany, medicinal and cultural anthropology.

PROFESSIONAL APPOINTMENTS

2013-2016 Postdoctoral Fellow, Hakai Scholar, University of British Columbia, Vancouver

Evolutionary diversification of marine macrophytes

2012 Postdoctoral Fellow, University of British Columbia Okanagan, Kelowna

An assessment of DNA markers for the identification of cultivated lavender species

2006-2007 Research Technician, Biodiversity Institute of Ontario, University of Guelph

Specimen management and DNA barcoding; Marine Barcode of Life (MarBOL) - Canadian Centre for DNA Barcoding

RESEARCH AND TEACHING GRANTS

2015 Hakai Research Grant, Hakai Institute (\$15,000 research funds with Patrick Martone)

2013 Hakai Research Grant, Hakai Institute (\$15,000 research funds with Patrick Martone)

2011 Innovative Learning Fund, Province of New Brunswick (\$25,000)

2009 Darwin Day Outreach Grant, Society for the Study of Evolution (\$400)

PUBLICATIONS

10. **Hind, K.R.**, Gabrielson, P.W., Jensen, C., and Martone, P.T. Evolutionary reversals in *Bossiella* (Corallinales, Rhodophyta): First report of a coralline genus with both geniculate and non-geniculate species. *Journal of Phycology*. In revision.
9. Lemay, M.A., Martone, P.T., **Hind, K.R.**, Lindstrom, S.C. and Parfrey, L.W. Alternate life history phases and cryptic species of a marine macroalgal genus have distinct microbial surface communities. *Molecular Ecology*. In revision.
8. **Hind, K.R.**, Upson, T., Mahmoud, S.S. An assessment of plant DNA barcodes for the identification of cultivated *Lavandula* (Lamiaceae) species. *Botany*. In revision.
7. **Hind, K.R.**, Gabrielson, P.W., Jensen, C., and Martone, P.T. (2016) *Crusticorallina* gen. nov., a non-geniculate genus in the subfamily Corallinoideae (Corallinales, Rhodophyta). *Journal of Phycology*. 52, 929-941.
6. **Hind, K.R.**, Martone, P.T., Miller, K.A., Young, M., Jensen, C., Gabrielson, P.W. (2015) Resolving cryptic species of *Bossiella* (Corallinales, Rhodophyta) using contemporary and historical DNA. *American Journal of Botany* 102(11), 1-19.
5. **Hind, K.R.**, Gabrielson, P.W., Lindstrom, S.C., Martone, P.T. (2014) Misleading morphologies and the importance of sequencing type specimens for resolving coralline taxonomy (Corallinales, Rhodophyta): *Pachyarthron cretaceum* is *Corallina officinalis*. *Journal of Phycology*. 50, 760-764.
4. **Hind, K.R.**, Gabrielson, P.W. and Saunders, G.W. (2014) Molecular-assisted alpha taxonomy reveals pseudocryptic diversity among species of *Bossiella* (Corallinales, Rhodophyta) in the eastern Pacific Ocean. *Phycologia*. 53(5), 443-456.
3. **Hind, K.R.** and Saunders, G.W. (2013) Molecular markers from three organellar genomes unravel complex taxonomic relationships within the coralline algal genus *Chiharaea* (Corallinales, Rhodophyta). *Molecular Phylogenetics and Evolution* 67, 529-540.
2. **Hind, K.R.** and Saunders, G.W. (2013) A molecular phylogenetic study of the tribe Corallineae (Corallinales, Rhodophyta) with an assessment of genus-level taxonomic features and descriptions of novel genera. *Journal of Phycology* 49, 103-114.
1. Smith, A. (+ 29 authors) (2012) *Wolbachia* and DNA Barcoding Insects: Patterns, Potential, and Problems. *PLoS ONE* 7(5): e36514.

TEACHING EXPERIENCE

- Current** **Senior Laboratory Instructor, University of Victoria**
 Direct all laboratory teaching in the following courses: Marine Invertebrate Biology (Biol322), Biology of Algae (Biol336), Evolution and Biodiversity (Biol184), Plant Physiology (Biol366), and Biology of Land Plants (Biol324).
- 2017** **Instructor, Biodiversity of Seaweeds, Bamfield Marine Sciences Centre**
 Taught all lectures and labs during an immersive 3-week field course.
- 2013** **Sessional Instructor, SCIE120, Topics in Sustainability Science, University of British Columbia**
 Topics covered included ocean acidification, biofuels, and green architecture.
- 2012** **Sessional Instructor, BIOL 125, Biology for Sciences Majors II, University of British Columbia**
 Topics covered included animal and plant development, behaviour and physiology, evolution, ecology and conservation biology. ***Teaching Honor Roll Award***
- 2012** **Laboratory Instructor, BIOL 125, Biology for Sciences Majors II, University of British Columbia**
 Revised laboratory manual and student evaluations, set-up labs, and was the sole instructor for two sections. Topics covered included plant and animal diversity, fungi, algae, microbiology and plant growth and reproduction.
- 2008 - 2011** **Coordinator, Let's Talk Science, University of New Brunswick**
 Recruited, managed and trained over 300 volunteers; fundraised and managed an operating budget of \$10,000/year; developed hands-on activities and lesson plans for K-12 science curricula; organized rural outreach trips and classroom visits for over 4000 youth across New Brunswick. ***Awarded Coordinator of the Year, 2nd place***
- 2010 - 2011** **Teaching Assistant, BIOL 4221, Diversity of Marine Algae, University of New Brunswick**
 Set-up daily lab experiments, planned and supervised field trips and marked student lab books and algal collections.
- 2008** **Teaching Assistant, BIOL 1017, Biological Principles II, University of New Brunswick**
 Facilitated the laboratory portion of this course by giving introductory lectures for each lab and marking reports. ***Awarded Teaching Assistant of the Year***
- 2003 - 2006** **Outdoor Education Instructor, Marine Biology and Rainforest Ecology, Bamfield Marine Sciences Centre**
 Taught hands-on marine biology programs to university and high school students; developed curricula for experiential learning in the marine environment and organized and facilitated student forums and career panels.

CURRICULUM DEVELOPMENT

Hind, K.R., Clarkston, B.E., Ollerhead, K., Tong, J. (2011) From blood cells to broken bones: An activity manual for New Brunswick teachers. New Brunswick Department of Education. 31 pp.

Hind, K.R., Brodersen, G., Hamsher, S.E., McMurtrie, C., Samways, K. (2011) Exploring Ecosystems: An activity manual for New Brunswick teachers. New Brunswick Department of Education. 24 pp.

Stewart, A., **Hind, K.**, Provencher, J., Man in't Veld, N., Tyne, S., Dickson, R. (2006) Bamfield School for Coastal and Marine Studies Learning Resource Guide. Alberni School District 70, British Columbia. 51 pp.

INVITED LECTURES & SEMINARS

- 2017** **Departmental Seminar, University of Victoria**
Biodiversity and community structure of coralline algae in the NE Pacific
- 2016** **Invited Speaker, Annual Meeting of the Canadian Botanical Association**
Seaweed diversity on Calvert Island: Urchin barrens, kelp forests and cryptic species
- 2014** **Coastal Archaeology and Ecology, Hakai Institute field course**
Pacific northwest seaweed diversity, traditional uses and ecological interactions
- 2013** **BIOL 209, Non-Vascular Plants, University British Columbia Okanagan**
Introduction to the algae
Introduction to Rhodophyta
- 2013** **Botany Postdoctoral Fellow Showcase Seminar**
Systematics of coralline algae
- 2011** **BIOL 1012, Biological Principles, University of New Brunswick**
The case of the missing sea otters.
- 2010, 2011** **BIOL 4221, Diversity of Marine Algae, University of New Brunswick**
Kelp forest ecology
Algal collections and management
- 2009** **BIOL 2053, Introductory Genetics, University of New Brunswick**
Using DNA barcoding to discover new or cryptic species

SUPERVISION & MENTORSHIP

I have supervised and mentored the following students:

- 2018 **Robyn Sahota**, Work Study student, UVic
Undergraduate botany assistant, plant care and technical support
- 2018 **Erin McLeod**, Work Study student, UVic
Undergraduate lab assistant, plant care and technical support
- 2018 **Brittany Olson**, Volunteer student, UVic
Herbarium assistant, database entry of seaweed collections and management of specimens
- 2017 **Josh McInnes**, Work Study student, UVic
Undergraduate assistant, technical support for algae labs
- 2015 **Allison Dennert**, Work Study student, UBC
Deposited over 600 coralline algal specimens collected by me (and Patrick Martone) in the Beaty Biodiversity Museum. Revised final collection information and created annotations for herbarium specimen labels.
- 2015 **Jimmy Nguyen**, Work Study student, UBC
Sequenced ~100 red, green and brown algal specimens collected by me (and Patrick Martone) from the Hakai Institute, Calvert Island, BC
- 2015 **Kyla Sheehan**, Research volunteer, UBC
Data entry for herbarium specimen collection information
- 2014 **Cassandra Jensen**, Co-op student, UBC
Coauthored three manuscripts, sequenced hundreds of algal specimens (including archival specimens), managed lab in my absence, extensive microscopy and histology sampling, collection management, phylogenetic data analysis and submission of sequence data to GenBank and BOLD
- 2014 **Martin Palanca** and **Keidy Marquez**, Research volunteers, UBC
Mounted ~200 specimens for deposition in Beaty Biodiversity Museum
- 2013 **Fion Shum**, Work Study student, UBC
Sequenced ~100 algal specimens from the Hakai Institute, Calvert Island, BC., created a database in the Martone Lab using the software FileMaker Pro
- 2013 **Madeline Young**, Work Study student, UBC
Coauthored one manuscript, sequenced over one hundred coralline algal specimens, conducted phylogenetic data analysis under my supervision
- 2010 **Matthew Havenga**, Directed Studies student, UNB
Extracted DNA from coralline algal specimens, conducted PCR and gel electrophoresis

AWARDS & FELLOWSHIPS

- 2014 Postdoctoral Travel Award, Faculty of Science, UBC, Vancouver
- 2013 Teaching Honour Roll Recipient, UBC Okanagan, Kelowna
- 2013 International Phycological Society Travel Award
- 2012 Best Talk, Northwest Algal Symposium, UBC, Vancouver
- 2011 Best Talk, Northeast Algal Society Meeting, Woods Hole, Massachusetts
- 2010 Coordinator of the Year, 2nd place, Let's Talk Science, Canada
- 2009 John S. Little International Study Fellowship, University of New Brunswick
- 2009 Travel Award, Graduate Student Association, University of New Brunswick
- 2009 Hoshaw Travel Award, Phycological Society of America
- 2009 Fredericton Ambassador Award, City of Fredericton, New Brunswick
- 2008 2nd Place, Best Poster, Canadian Society for Ecology and Evolution, Vancouver
- 2008 Honorable Mention, Poster Award, bioGENESIS Evolutionary Applications, Vancouver
- 2008 Teaching Assistant of the Year, University of New Brunswick
- 2008 Florence M. Christie Research Fellowship, University of New Brunswick

PROFESSIONAL SERVICE & OUTREACH

- 2011 - 2018 Peer Reviewer for *Australian Systematic Botany*, *Botanica Marina*, *Cryptogamie Algologie*, *Journal of Phycology*, *Molecular Ecology Resources*, *Phycologia*
- 2010 - 2015 Executive Committee Member, Phycological Society of America
- 2011 Executive Committee Member, Northeast Algal Society
- 2011 Awards Selection Committee Member, National Association of Biology Teachers
- 2009, 2011 Lead Coordinator, Symposium for Women Entering Ecology and Evolution Today
- 2009 - 2011 Executive Committee Member, Biology Graduate Student Society

SOCIETAL MEMBERSHIPS

Canadian Association of Underwater Science
Canadian Society of Ecology and Evolution
International Phycological Society
Northeast Algal Society
Northwest Algae and Seagrass Society
Phycological Society of America
Society for the Study of Evolution

CERTIFICATIONS

Small Vessel Operator Proficiency (SVOP)
 Marine Emergency Duties A1 and A2
 VHF Restricted Operators Certificate
 Pleasure Craft Operator
 CPR level "C" and St. Johns Ambulance First Aid, level one
 PADI Advanced SCUBA and Rescue Diver
 Canadian Association of Underwater Science Level One Diver

SELECTED TALKS & POSTER PRESENTATIONS

Hind, K.R. and Martone, P.T. (2016) Describing and monitoring seaweed diversity through time. Hakai Research Exchange, Nanaimo, British Columbia. (*Regional*, Oral presentation).

Hind, K.R. and Martone, P.T. (2016) Coralline algal community structure: how barren are urchin barrens? Western Society of Naturalists Meeting, Monterey, California. (*International*, Oral presentation).

Hind, K.R. and Martone, P.T. (2014) Macroalgal species connectivity between Canada and Chile. National Chilean Congress of Micro and Macro Algae, Vina Del Mar, Chile. (*International*, Oral presentation).

Hind, K.R. and Martone, P.T. (2013) Genome size and evolutionary diversification in coralline algae. Northwest Algal Symposium, Whidbey Island, Washington. (*International*, Oral presentation).

Hind, K.R. and Saunders, G.W. (2012) Pseudo-cryptic diversity among species of *Bossiella*. Northwest Algal Symposium, Beaty Biodiversity Museum, Vancouver, British Columbia. (*Regional*, Oral presentation). ***Awarded Best Student Oral Presentation***

Hind, K.R. and Saunders, G.W. (2011) A molecular phylogenetic study of the tribe Corallineae (Corallinales, Rhodophyta) with an assessment of genus-level taxonomic features and descriptions of novel genera. Northeast Algal Symposium, Woods Hole, Massachusetts. (*International*, Oral presentation). ***Awarded Best Student Oral Presentation***

Hind, K.R. and Saunders, G.W. (2011) First evidence of crustose coralline members in the subfamily Corallinoideae. Annual Meeting of the Canadian Society for Ecology and Evolution, Banff Centre, Banff, Alberta. (*National*, Poster presentation).

Hind, K.R. (2010) Increasing science outreach to French-speaking communities. National Let's Talk Science Conference, London, Ontario. (*National*, Oral presentation).

Hind, K.R. and Saunders, G.W. (2010) Identification of cryptic species in the genus *Bossiella* (Corallinales, Rhodophyta) in Canada. Northeast Algal Symposium, Roger Williams University, Bristol, Rhode Island. (*International*, Poster presentation).

Hind, K.R. (2009). Teaching evolutionary concepts: Darwin Day. National Let's Talk Science Conference, London, Ontario. (*National*, Oral presentation).

Hind, K.R. and Saunders, G.W. (2009) Identification of species in the genus *Corallina* (Corallinales, Rhodophyta) in Canada. International Phycological Congress, National Olympics Memorial Youth Centre, Tokyo, Japan. (*International*, Poster presentation).

Hind, K.R. and Saunders, G.W. (2008) Identification of articulated coralline algae using the DNA barcode. Annual Meeting of the Canadian Society for Ecology and Evolution, University of British Columbia, Vancouver, British Columbia. (*National*, Poster presentation). ***Awarded 2nd place Best Student Poster***

REFERENCES

Dr. Patrick Martone

Associate Professor

Department of Botany and Biodiversity Research Centre, University of British Columbia, Vancouver

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email: patrick.martone@botany.ubc.ca

Dr. Gary Saunders

Professor

Department of Biology, University of New Brunswick, Fredericton

tel: (506) 452-6216

email: gws@unb.ca

Dr. Paul Gabrielson

Department of Biology, Herbarium, University of North Carolina, Chapel Hill

tel: 919-644-3238

email: drseaweed@hotmail.com