

THE UNIVERSITY OF BRITISH COLUMBIA
Curriculum Vitae for Faculty Members

Date: Nov 2020 Initials: _____

1. **SURNAME:** RICHARDSON **FIRST NAME:** John **MIDDLE NAME:** Stuart
2. **DEPARTMENT/SCHOOL:** Forest and Conservation Sciences
3. **FACULTY:** Forestry
4. **PRESENT RANK:** Professor **SINCE:** July 2007
5. **POST-SECONDARY EDUCATION**

University or Institution	Degree	Subject Area	Dates
University of Toronto	B.Sc.	Zoology	1979
University of Alberta	M.Sc.	Zoology	1983
University of British Columbia	Ph.D.	Zoology / Ecology	1989

PhD Thesis: Seasonal food limitation of detritivorous insects in a montane stream. (Supervisor: Dr. W.E. Neill)

Special Professional Qualifications

Community and population ecology, and ecosystem studies

1. Community and population processes in streams, riparian areas, and wetlands
2. Organic carbon dynamics in small streams
3. Applied studies of the effects of land-use (e.g. forestry), contaminants, and other disturbances on streams
4. Endangered and threatened species associated with streams and riparian areas

6. **EMPLOYMENT RECORD**

(a) *Prior to coming to UBC*

University, Company or Organization	Rank or Title	Dates
*BC Ministry of Environment, Lands & Parks	Senior Scientist	1995 -2000
Dept. of Fisheries and Oceans	Visiting Scientist	1993
Simon Fraser University	Asst. Professor limited term	1992
Simon Fraser University	NSERC Postdoctoral Fellow	1989 - 1991

*In my position as Senior Scientist with BC Environment, my primary mandate was to conduct research in support of the government's riparian ecosystems and wildlife programs. I was located full time at UBC on faculty as an Assistant Professor and directly supervised graduate students.

(b) *At UBC*

Rank or Title	Dates
Head of Department	2012 - present
Professor	2007 - present
Professeur Invité, 1ère classe, 3me echelon – Université Paul Sabatier, Toulouse, France	2006 - 2007
Associate of the Peter Wall Institute for Advanced Studies	2004 - present
Associate Professor	2002 - 2007
Faculty Associate, Dept of Zoology, UBC	1996 - present
Assistant Professor	2000 - 2002

Assistant Professor ("part time")	1996 - 2000
Research Associate	1994 - 1995

(c) *Date of granting of tenure at U.B.C.: 1st July 2002*

7. LEAVES OF ABSENCE

University, Company or Organization at which Leave was taken	Type of Leave	Dates
Université Paul Sabatier (Toulouse III) & Centre National de la Recherche Scientifique, Toulouse, France (research with Dr. Eric Chauvet)	Study leave	Sept 2006 – Aug 2007

8. TEACHING

(a) *Areas of special interest and accomplishments*

Specialities: Aquatic ecology, Ecology (including applied ecology), Conservation Biology, Wildlife Biology

Teaching philosophy, approach, and goals

I believe it is critical to find elements in a topic that are relevant to the personal experience of undergraduates. This teaching context builds on their foundation of experience and is especially critical in a classroom setting for those students that learn better by "doing" rather than abstract learning. As a class, students bring a diversity of backgrounds, and finding where one can link new knowledge to their previous understanding reinforces the material. In a professional faculty it is essential that the connections to practice are explicitly drawn and the relevance is clearly stated.

A variety of ways of delivering material is important to accommodate the learning styles and schedules of students. I was one of the first faculty in Forestry at UBC to place all of my teaching materials for my undergraduate courses on a web site so that students could concentrate on the lesson rather than getting down each detail (web addresses below). Lecture notes were also available in hard copy in the library (no longer). Providing these alternative means to get the lecture materials made it more convenient for many of the students and there was a consensus of approval for this service.

In 1998 I took the Instructional Skills Workshop offered by the Centre for Teaching and Academic Growth (UBC), an internationally recognised teaching workshop.

Teaching Experience

While I was a "part time" assistant professor (during my time as senior scientist for the BC Ministry of Environment) I taught several courses, and participated in the teaching of others. There was no requirement in my position to do any teaching, but I believe it is a critical role for all faculty. I also sought to provide graduate courses that would be valuable to our students.

Courses taught

I co-taught a lecture and discussion graduate course with Michael Healey (Inst for Resources and Environment) entitled "Ecosystem Health in Theory and Practice" (RMES 500). In it we addressed the

notion of using a metaphor from human health to consider the integrity of ecosystem structure and function.

Another graduate course I developed, and have since modified, is a course on stream and riparian systems. I first offered it as "Hydroriparian systems" (FRST505B) in 1998, based on lectures and readings, followed by a series of three student-run workshops. The class was divided into working groups each of which had to develop a workshop, based on a background review of their topic and then a 2-day workshop. The workshops were run as symposia with invited speakers giving talks, with time for discussion around each. Since that initial offering I have taught Ecohydrology (FRST 588) in collaboration with Dr. Dan Moore (Geography) The course is interdisciplinary, covering the physical, chemical, biological, and management aspects of fluvial ecosystems. The first time we offered that course we topped it off with a one-day symposium based primarily on student presentations, and invited speakers, and was attended by about 60 individuals from within and beyond the university. The course attracts students from Geography, Forestry, Zoology, RMES, and Civil Engineering. In the years the course has been offered we have had over 60 students in the course. This kind of course helps connect practitioners of different fields across campus.

My primary undergraduate teaching responsibilities to date are Aquatic Ecosystems and Fish (FRST 386), and Wildlife Biology and Management (FRST395), both required courses in the Forest Management and Natural Resources Conservation programmes. These courses are the two largest classes of the third and fourth year courses in the Faculty of Forestry, and both courses are regularly taken by students from other faculties as well. Both have laboratories, and in FRST395, I run all the laboratories myself. In the wildlife course I have developed a series of lectures that starts from basic principles of wildlife biology and quickly moves into a series of management aspects. This course uses current examples as case studies for illustrating broader management issues, e.g. the genetics of Kermode bear to discuss genetic variation in wildlife management, marbled murrelet demography as an example of an old-growth dependent species, and mountain caribou as a landscape-level planning issue. The laboratories introduce students to the major groups of wildlife and techniques used to estimate their numbers in the wild and biases associated with estimation procedures and demographic analyses.

I have also offered a graduate course in Community Ecology (FRST505B). This was a lecture and discussion class, with students responsible for leading about half of the classes. The topic for this series was complex interactions in communities. There is no regularly offered graduate class on this subject.

(b) *Courses Taught at UBC (100% taught unless noted)*

Session	Course Number	Scheduled Hours	Class Size	Hours Taught			
				Lectures	Tutorials	Labs	Other
W95	RMES 500	[3-0]	12	36 (50%)			
F98	CONS 500	[4-0]	21	48			
F98	FRST 505B	[3-0]	11	36			
W98	FRST 395	[3-2]	167	36		120	
F99	CONS 500	[4-0]	20	26 (50%)			
F00	CONS 500	[4-0]	10	48 (50%)			
W00	FRST 589	[3-0]	11	36 (33%)			
W00	FRST 505B	[3-0]	7	36			
F01	FRST 395	[3-2]	92	36		120	
W01	FRST 589	[3-0]	8	36 (50%)			

F02	FRST 395	[3-0]	62	36		120	
F02	CONS 500	[4-0]	8	26			
W02	FRST 386	[3-0]	42	36 (50%)			
W02	FRST 589	[3-0]	14	36 (50%)			
F03	FRST 395	[3-2]	62	30		120	
W03	FRST 386	[3-2]	42	36 (50%)			
W03	FRST 589	[3-0]	6	26 (50%)			
F04	FRST 395	[3-2]	71	36		120	
W04	FRST 386	[3-2]	60	36 (50%)			
W04	FRST 589	[3-0]	7	26 (50%)			
F05	FRST 395	[3-2]	65	36		90	
W05	FRST 386	[3-2]	55	36 (50%)			
W05	FRST 588	[3-0]	5	26			
F07	FRST 395	[3-2]	75	36		90	
W07	FRST 386	[3-2]	67	36 (50%)			
W07	FRST 588	[3-0]	6	26 (50%)		90	
F08	FRST 395	[3-2]	85	36		90	
W08	FRST 386	[3-2]	68	36 (50%)			
W08	FRST 588	[3-0]	6	26 (50%)			
F09	FRST 395	[3-2]	92	36		90	
W09	FRST 386	[3-2]	80	36 (50%)			
W09	FRST 588	[3-0]	8	26 (50%)			
W10	FRST 395	[3-2]	90	36		90	
W10	FRST 386	[3-2]	89	36 (50%)			
W10	FRST 588	[3-0]	6	26 (50%)			
W11	FRST 395	[3-2]	96	36		90	
W11	FRST 386	[3-2]	92	36 (50%)			
W11	FRST 588	[3-0]	10	26 (50%)			
W12	FRST 395	[3-2]	122	36		120	
W12	FRST 386 / BIOL 402	[3-2]	119 / 23	36 (50%)			

Note: I was on research leave during the 2006 academic year

Student evaluations

My teaching evaluation scores consistently rank my teaching from good (3) to excellent (1). Course evaluations from students indicate several strengths of my teaching, including my knowledge of the subject, my enthusiasm for communicating that knowledge, my preparedness for lectures, the effort I make in being accessible to students, and provision of full lecture notes on-line. Both of these courses are required courses in several of the undergraduate programmes in our faculty. I continue to learn new techniques for instruction and try new approaches to help students appreciate the connections among topics. Large class sizes make it difficult to engage the entire class in discussion, but I try practicing techniques to better involve the students in active participation in the classroom. I have completed UBC's Instructional Skills Workshop and have learned new means to involve students more completely in the learning process. I continue developing my teaching skills to become a more effective instructor.

Course	Year	Evaluation Index ¹	Students completing form	Evaluation rank within faculty (annual)	Teaching load within faculty (annual) – ranking within faculty (1 being highest teaching load index)
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FRST 395	W98	2.23	103	26 / 56	Index 45 (faculty avg 29.5)
CONS 500	F98	2.04	14	24 / 59	Index 27 (faculty avg 29.5)
CONS 500	F99	2.00	20		
FRST 505B	W00	1.86	6	19 / 56	Rank 14 / 53
FRST 589	W00	1.34	7		
CONS 500	F00	2.97	9		
FRST 395	F00	2.24	81	41 / 57	6 / 52
FRST 395	F01	2.01	72	35 / 57	3 / 48
CONS 500	F01	2.28	8		
FRST 395	F02	1.67	41	33 / 59	1 / 47
CONS 500	F02	2	7		
FRST 386	W02	2	33		
FRST 395	F03	1.49	50	14 / 54	1 / 52
FRST 589	W03	1.7	6		
FRST 395	F04	2.13	44	36 / 57	1 / 60
FRST 386	W04	2.08	48		
FRST 395	F05	2.00	50	42 / 57	1 / 45
FRST 386	W05	2.16	42		
N.B. ²					
Change in ranking system³					
FRST 395	F07	4.49	44	23 / 57	1 / 54
FRST 386	W07	4.39	42		
FRST 588	W07	4.82	6		
FRST 395	F08	4.47	45	30 / 57	4 / 54
FRST 386	W08	4.31	53		
FRST 395	F09	4.45	58	27 / 53	8 / 54
FRST 386	W09	4.39	46		
FRST 588	W09	4.47	7		
FRST 395/386	W10	4.16		34 / 59	7 / 54
FRST 395	W11	4.27	66		
FRST 386	W11	4.43	42		
FRST 588	W11	4.45	9	23 / 58	
FRST 395	W12	4.1	57		
FRST 386	W12	4.37	46	37 / 66	2 / 53
BIOL 402	W12	4.5	12		
FRST 395	W13	4.23	53	30 / 56	2 / 51
FRST 386	W13	4.13	60		
BIOL 402	W13	4.38	8		
FRST 588	W13	4.57	7		
FRST 386	W17	4.38		15.5 / 50	36 / 50

Note¹: Evaluation Index extends from 1 (excellent) to 2 (very good) to 6 (very poor); Teaching load index also includes graduate student supervision and honours undergraduate student supervision (project students), in addition to undergraduate teaching.

Note²: No evaluations for 2006 academic session as I was on research leave

Note³: 5 point scale with 5 = excellent, 4 = good, etc.

Other courses

Courses in China These courses have been delivered in China as part of our 2+2 program (students complete years 1 and 2 in China, then year 3 and 4 at UBC and earn a UBC degree).

2013: Watershed management – Nanjing Forestry University

2014: Freshwater ecosystems – Fujian Agriculture and Forestry University

2015: Ecology of Forests – Nanjing Forestry University

2016: Ecology of Forests – Beijing Forestry University

Field courses: FRST451, FRST351, FRST352, and CONS451. Our faculty offers several field courses to which I often contribute. In FRST451, our spring field camp I have devoted three to four full days to the course in previous years, including leading exercises and examining students. I have participated in FRST 351 (fall field camp - Williams Lake) three times (1999, 2001, 2002) spending several days in camp. I have had a small role in CONS 451, most years contributing one full day to the field component in aquatic ecology.

Courses at SFU (1991, 1992) - Introduction to Ecology, Animal Ecology, Limnology.

As a post-doctoral fellow at SFU I instructed a graduate course in Aquatic Biology (it was in the calendar but hadn't been taught for many years). There were 9 students registered for that class, which I ran as a half lecture and half student-led class. I was hired as a limited-term Assistant Professor in 1992 to teach two required courses, Introduction to Ecology (BISC 204 - about 40 students) and Animal Ecology (BISC 304 - about 120 students). In both cases I developed the lectures from scratch, which gave me experience preparing for classes and made the material "fresher".

Teaching evaluations from SFU: In BISC 204 – 1.44 (27 responses), BISC 304 – 2.25 (106 responses), based on a scale of 1 (excellent) to 5 (poor).

Guest lectures. I give several guest lectures each year. These include in Watershed Management (RMES 500B), Graduate Seminar in Ecology (ZOOL 502), and Insect Ecology (BIOL 411). I also give occasional lectures in Vertebrates of BC (BIOL 427), Aquatic Biology (BIOL 402), Conservation Biology (BIOL416), and Vertebrate Biology (UVic Biology), Visualizing Climate Change (FRST240), TerreWeb Graduate seminars; Restoration Ecology (UFOR403); Wildlife Biology (FRST395); Guest lectures at Beijing Forestry University (Undergraduate class in restoration ecology, and graduate class in conservation biology).

(c) *Graduate Students Supervised*

Graduate Student Supervision and Mentoring

I have been fortunate to attract a number of very good graduate students. Each year I have had large numbers of inquiries from prospective students (often 150+). At the moment I have ten (8 Ph.D., 2 M.Sc.) graduate students and have graduated 32 students in the past 18 years. In recent years the majority of these students arrived with external scholarships from NSERC, NSF (USA), and the Fulbright Foundation. My laboratory is relatively large, but I feel that I devote sufficient attention to each of the students that they are well taken care of (they would be the judge of that). A large group, which includes post-doctoral fellows provides a certain inertia and critical intellectual mass that I feel can function more effectively than a small group. For the moment I intend to maintain a group of about 5 graduate students, or more if a prospective student sufficiently impresses me (as happened in autumn 2005). My choice of graduate students is based on intellectual fit, aspirations, scientific approach, and past record. I do not have a formula for which of these traits is most critical, nor do I select only students with external scholarships, even though the six most recent students all came with scholarships.

I believe in treating graduate students as colleagues and helping guide their thinking and projects rather than assigning their thesis topics. I am convinced that this approach leads to more mature and independent scientists at the end of their program and ensures that they have control and ownership of their own research. To meet this ideal in graduate student research requires a lot of contact time and I usually meet weekly with each student, and maintain an open-door policy to all of them. We also have weekly meetings as a research group to discuss ideas and papers.

Since my start at UBC I have invested heavily in graduate student training. Initially I only accepted M.Sc. students until I had sufficient experience to feel confident taking on Ph.D. students. This lag was also associated with the nature of my joint position as BC Environment's senior scientist and a "part time" assistant professor at the start since there was always uncertainty with the location and mandate of my position.

Graduate students need experience in communication and whenever possible I have encouraged my students to participate actively in conferences. When funds allow I send each student to a large meeting each year (Ecological Society of America, Society for Freshwater Science, Society for Conservation Biology), and also support their travel to local meetings (e.g., the Pacific Ecology Conference, Society for Northwestern Vertebrate Biologists, Canadian Amphibian and Reptile Conservation Network, etc.). I very strongly encourage students to give presentations (oral or posters) at meetings. When opportunity arises I urge my students to prepare written papers for publication in proceedings or other printed forms. I have also strongly encouraged my students to publish their work in peer-reviewed journals, and the evidence for the success of that can be seen in the list of publications resulting from my graduate students' work below.

Student Name	Program Type	Year		Principal Supervisor	Co-Supervisor(s)
		Start	Finish		
Rempel, Laura	MSc (Zool)	1994	1997	J. Richardson	M. Healey
Dymond, Pamela	MSc (Zool)	1995	1998	J. Richardson	
Shaw, E. Al	MSc	1996	1999	J. Richardson	
Boss, Shelly	M.Sc.	1996	1999	J. Richardson	
Kim, M. Agi	M.Sc.	1996	1999	J. Richardson	
Muchow, Christine	M.Sc.	1996	DNF	J. Richardson	
Melody, Jill	M.Sc.	1996	2000	J. Richardson	
McArthur, Mike	M.Sc.	1997	1999	J. Richardson	
Matsuda, Brent	M.Sc.	1997	2001	J. Richardson	
Maxcy, Katherine	M.Sc.	1997	2000	J. Richardson	
Negishi, Junjiro	M.Sc.	1998	2001	J. Richardson	
Lavallee, Susanne	Ph.D.	1999	2006	J. Richardson	
Peterson, Heidi	M.Sc.	1999	2001	J. Richardson	
Gomi, Takashi	Ph.D.	1997	2002	R. Sidle	J. Richardson
Kolodziejczyk, Renata	M.Sc.	1999	2005	J. Richardson	
Christensen, Jennie	M.Sc.	2000	2002	J. Richardson	
Bondar, Carin	Ph.D.	2001	2007	J. Richardson	
Hoover, Trent	Ph.D.	2001	2008	J. Richardson	
Hilton, Alana	M.Sc.	2002	2006	J. Richardson	
Marczak (Miller), Laurie	Ph.D.	2002	2007	J. Richardson	
Quilty, Ed	Ph.D.	2002	DNF	J. Richardson	
Bennett, Shauna	M.Sc.	2003	2010	J. Richardson	
Branton, Margaret	Ph.D.	2004	2011	J. Richardson	

Deguisse, Isabelle	M.Sc.	2005	2007	J. Richardson	
Larson, Lisa	M.Sc.	2005	2009	J. Richardson	
Reiss, Aya	M.Sc.	2005	2007	J. Richardson	
Turvey, Shannon	M.Sc.	2005	2007	J. Richardson	
Wood, Sylvia	M.Sc.	2005	2007	J. Richardson	
Sanpera-Calbet, Isis*	Masters	2006	2007	J. Richardson	Eric Chauvet
Murakami, Aya	M.Sc.	2007	2009	J. Richardson	
Sheldon, Kim	M.Sc.	2008	2010	J. Richardson	
Ingram, Stephanie	MSc (Zool)	2008	2011	J. Richardson	
Atwood, Trisha	Ph.D.	2009	2013	J. Richardson	
Klemmer, Amanda	M.Sc.	2009	2011	J. Richardson	
Oaten, Dustin	Ph.D.	2009	WD	J. Richardson	
Little, Patrick	M.Sc.	2009	2011	Y. Alila	J. Richardson
Avery-Gomm, Stephanie	MSc (Zool)	2010	2013	J. Richardson	J. Rosenfeld
Ramey, Tonya	Ph.D.	2011	2019	J. Richardson	
Ruiz-Esquide, Jose	M.Sc.	2012	2015	J. Richardson	
Naman, Sean	Ph.D.(Zool)	2012	2017	J. Richardson	J. Rosenfeld
Rosetti de Paula, Felipe	Ph.D.	2012	2018	J. Richardson	
Chará-Serna, Ana	Ph.D.	2012	2017	J. Richardson	
Yeung, Alex	Ph.D.	2013	2019	J. Richardson	
Kielstra, Brian	Ph.D.	2013	2020	J. Richardson	
Courcelles, Danielle	M.Sc.	2014	2016	J. Richardson	
Fuss, Gillian	M.Sc.	2015	2019	J. Richardson	
Gamlen-Greene, Roseanna	Ph.D.	2016		S. Aitken	J. Richardson
Tavernini, David	M.Sc.	2016	2019	J. Richardson	
Moran, Kasey	Ph.D.	2016		J. Richardson	
Lane, Stefanie	Ph.D.	2018		J. Richardson	
Teresa Silverthorn	M.Sc.	2018	2020	J. Richardson	
Angie Coulter	M.Sc.	2018		J. Richardson	
Sabine Sherrin	M.Sc.	2018		J. Richardson	
Arlo Bryn-Thorn	M.Sc.	2018		J. Richardson	
Mariella Becu	M.Sc.	2019		J. Richardson	
Kelsey Tikka	M.Sc.	2020		J. Richardson	

Notes: several students have had maternity/paternity leaves from program (Bondar, Kolodziejczyk, Lavallee, Branton, Hoover, Bennett) increasing their apparent time in program.

*Master's student at Université Paul Sabatier, France (during study leave).

Note: some students registered through Zoology noted, otherwise registered in Forest and Conservation Sciences

Undergraduate theses supervised (several graduating essays each year – not listed)

Student Name	Program Type	Year		Principal Supervisor	Co-Supervisor(s)
		Start	Finish		
Hassard, Eric	B.Sc. (Forestry) thesis	1997	1998	Richardson	
Cockle, Kristina	B.Sc. (Forestry) thesis	1999	2000	Richardson	P. Arcese

Karlsson, Magnus	M.Sc. (Uppsala, Sweden) visiting student practicum	1999	2000	Richardson	
Vickers, Karen	B.Sc. (Biology) thesis	2000	2001	Richardson	
Kaiser, Drew	B.Sc. (Forestry) thesis	2000	2001	Richardson	M. Feller
Klassen, Lana	B.Sc. (Forestry) thesis	2000	2001	Richardson	S. Hinch
Nishio, Grant	B.Sc. (Forestry) thesis	2001	2002	Richardson	
Martin, Chris	B.Sc. (Forestry) thesis	2002	2002	Richardson	
Haight, Stephanie	B.Sc. (Forestry) thesis	2001	2002	Richardson	
Bottriell, Kate	B.Sc. (Nat. Res.) thesis	2003	2003	Richardson	
Poruchny, Destiny	B.Sc. (Biology) thesis	2003	2004	Richardson	
Hofer, Nancy	B.Sc. (Nat. Res.) thesis	2003	2004	Richardson	
Zeron, Katie	B.Sc. (Nat. Res.) thesis	2004	2005	Richardson	
Harrison, Megan	B.Sc. (Nat. Res.) thesis	2004	2005	Richardson	
Sheldon, Kim	B.Sc. (Nat. Res.) thesis	2006	2007	Richardson	
Walling, Hazel	B.Sc. (Biology) thesis	2007	2008	Richardson	
Martin, Amanda	B.Sc. (Nat. Res.) directed studies	2008	2009	Richardson	
Anderson, Meghan	B.Sc. (Nat. Res.) thesis	2008	2009	Richardson	
Chan, Carita	B.Sc. (Environmental Studies) honours	2009	2010	Richardson	
Rickard, JoAnna	B.Sc. (Nat. Res.) thesis	2010	2011	Richardson	
Roxanne Kocwarski	B.Sc. (Biology) directed studies	2011	2011	Richardson	
Rebecca Siefert	B.Sc. (Environmental Studies) honours	2011	2012	Richardson	
Tristan Slade	B.Sc. (Nat. Res.) thesis	2011	2012	Richardson	
Mikayla Roberts	B.Sc. (Forest Sci.) thesis	2014	2015	Richardson	
Jennifer Chen	B.Sc. (Forest Sci.) thesis	2014	2015	Richardson	
Kasey Moran	B.Sc. (Biology) thesis	2014	2015	Richardson	
Megan Fong	B.Sc. (Forest Sci.) thesis	2015	2017	Richardson	
Candy Lo	B.Sc. (CONS) thesis	2019	2019	Richardson	
Yitong Lyu	B.Sc. (Forest Sci.) thesis	2018	2019	Richardson	

*(d) Continuing Education Activities**(e) Visiting Lecturer (indicate university/organization and dates)*

Nanjing Forestry University (July 2013) 6-day intensive course in Freshwater Ecosystems
 Fujian Agricultural and Forestry University (June 2014) 7-day intensive course in Watershed
 Management; Nanjing Forestry University (2015) Forest Ecology; Beijing Forestry University
 (April 2016) Forest Ecology; Nanjing Forestry University (2016)

*(f) Other***Research Associates Supervised**

Peter M. Kiffney, Ph.D. Colorado State (1996-1998) – currently research scientist, National Marine
 Fisheries Service, NOAA, Seattle

Postdoctoral Fellows Supervised

Charlotte Gjerløv, Ph.D. London. 1999 – Dec 2002 – now research manager with Wales Conservancy
 for Nature

Yixin Zhang, Ph.D. Umeå, Sweden. 2000 – 2004 – now Associate Professor, Xi'an Jiaotong-Liverpool
 University, China

Takashi Sakamaki, Ph.D. Tohoku, Japan (Fellowship from Japanese Society for the Promotion of
 Science). 2004 – 2009 – now Associate Professor, Ryukyus University, Japan

Antoine Lecerf, Ph.D. Université Paul Sabatier, Toulouse, France. 2006 – 2008 – now Assistant
 Professor, Université Paul Sabatier

Laurie Marczak, Ph.D. U British Columbia. 2007 – 2008 – now Assistant Professor, University of
 Montana

Santiago Larrañaga, Ph.D. University of the Basque Country, Spain. 2008 – 2010 – now instructor at
 Begoñako Andra Mari Teacher Training University, Spain

John Kominoski, Ph.D. University of Georgia, USA. 2008 – 2010 – now Assistant Professor at Florida
 International University

Rachael Dudaniec, Ph.D. Flinders University, Australia. 2008 – 2011 – now Assistant Professor at
 Macquarie University, Sydney, Australia

Trent Hoover, Ph.D. University of British Columbia. 2008 – 2010 – now Assistant Professor at
 University of Lethbridge

Misun Kang, Ph.D. University of Windsor. 2009 – 2010 – now a consultant in British Columbia

Hamish Greig, Ph.D. University of Canterbury, NZ. 2009 – 2011 – now Assistant Professor, the
 University of Maine

Takuya Sato, Ph.D. Mie University, Japan. 2011 – 2013 – now Associate Professor, University of
 Kobe, Japan

Pauliina Louhi, Ph.D. University of Oulu, Finland. 2012 – 2013 – now research scientist

Elizabeth Perkin, Ph.D. Freie Universität Berlin. 2013 – Aug. 2015

Liliana García Lago, Ph.D. (University of Vigo, Spain) 2014 – Dec. 2015

Lenka Kuglerová, Ph.D. (University of Umeå, Sweden) 2015 – 2017

Ahmed Siddig, Ph.D. (University of Massachusetts) Nov. 2015 – Dec. 2016

Claire Ruffing-Cathcart, Ph.D. (U of Kansas) Aug 2017 - present

Research Assistants Supervised (not including summer undergraduate assistants)

Diane Klimuk (1998 - 2001) – currently with BC Ministry of Environment
 Pamela Reece (1998 - 2001) – currently with Forestry Canada, Research
 Jeff Shatford (1997-1999) – currently scientist with Parks Canada
 Chris Alloway (1998 -1999) – currently with Environment Canada, Ontario
 Jennifer Bull (1998 - 2002) – currently with BC Ministry of Environment
 Tatiana Lee (2000 - 2004) – currently an independent consultant
 Natalie Lissimore (1999 - 2000) – currently research assistant with Fisheries and Oceans, Canada
 Erin Koga (2001 – 2002) – currently a quality control supervisor
 Conan Phelan (2001 – 2004) – currently a PhD candidate at SFU
 Leanne Baker (2002 – 2003) – currently a graduate student at UWindsor
 Johanna Ledezma (2002 – 2003) – water quality analyst with GVRD
 Nancy Hofer (2004 – 2006) – graduate student in Planning, UBC
 Amandine Chargois (2008 – 2008) – parenting
 Will Gibson (2004 – 2009) – currently a consultant
 Xavier Pinto (2004 – 2008) – currently consultant
 Pina Viola (2004 – 2010) – currently consultant
 Angie Nicolas (2017 -)

Supervisory Committees (Dept indicated unless within Forestry, UBC)

Heather Ferguson (Zoology), Barb Johnston (Zoology), Bea Beisner (Zoology), Maggie Squires (SFU),
 Elke Wind, Christel Shaughnessy (Botany), Janelle Curtis (Zoology), Tom Bell (Zoology), Karen Halwas
 (Geography), Maura MacInnes (Zoology), David Oldmeadow (Geography), Todd Golumbia, Tanya
 Wahbe, Devon Haag, Laura Cotton, Shirley Fuchs, Lisa Shama (UVic), Glenn Sutherland, Susan
 Shirley (Zoology), Lisa Holleman, Chantal Ouimet (Zoology), Kirsten Mackenzie, Jennifer Hiebler,
 Jennifer de Groot, Laura Rempel (Geography), Allyson Longmuir (Zoology), Rus Maynard (RMES),
 Jackie Ngai (Zoology), Sheena Pappas (IRES), Rob Shearer, Kristen Storry, Nira Salant (Geography),
 Jeff Young, Sandra Nicol (Zoology), Ashley Horne (Geography), Patrick Nadeau, Patrick Thompson
 (Zoology), Jan Verspoor (SFU, Biology), David Roscoe, Jenn Burt, Julie Wilson (IRES), Elizabeth
 Perkins (IGB – Berlin Free University), Robin LeCraw (Zoology), Hazel Walling (SFU), Gennifer
 Meldrum (Zoology), Lesley Winterhalt (Geography), Kendra Robinson, Jason Leach (Geography),
 Monica Yau (Zoology), Ryan Germain, Seth Rudman (Zoology), Nolan Bett, Alatheia Letaw (Zoology),
 Sarah Amundrud (Zoology), Giles Shearing (UBC-Okanagan), Vanessa Minke-Martin, Therese
 Frauendorf (UVic Biology), Dave Reid (Geography), Natalie Westwood (Zoology), Karly Harker, Carina
 Helm (Geography), Adam Kanigan, Taylor Wade

PhD University examiner at UBC [excluding other universities – see below] - John Pritchard, Bob
 Mooney, Deb Wilson, Steve Wilson, Jordan Rosenfeld, Eric Mellina, Vanessa Craig, E. Frances
 Cassirer (LAFS), Nathan Taylor, Brian Starzomski, Kathryn Aitken, Joleen Timko (Forestry
 2008), Glenn Crossin (Forestry 2008), Andre Zimmermann (Geography 2009), Spencer Wood
 (Zoology 2009), Erin Rechisky (Fisheries 2010), Laura White (Zoology 2010), Divya Varkey
 (Fisheries 2010), Richard McCleary (Geography 2011), Ali Naghibi (Civil Engineering 2011),
 Russell Markel (Zoology 2011), Erika Eliason (Zoology 2011), Andrea Stephens (Zoology 2012),
 Brett Van Poorten (Zoology 2012), Jennifer Guevara (Zoology 2012), Desirée Tommasi (EOS
 2013), Rebecca Kordas (Zoology 2014), Tomás Ibarra (Forestry 2014), James Slogan (Zoology
 2015), David Cappell (Oceanography 2016), Shawn Chartrand (Geography 2017), Shijun You
 (Botany 2017), Nora Brown (Zoology 2018), Marina Giacomini (Zoology 2019), Sarah Amundrud
 (Zoology 2020)

PhD Exams Chaired - Ettaleb (Civil Engineering), Lyn Baldwin (Botany), Ainsworth (Fisheries),
 Greene (Earth & Ocean Sciences), Foster (Fisheries), Michael Sheriff (Zoology), Pak Sui Lam
 (Chemical and Biological Engineering), Caroline Cloutier (Chemical and Biological Engineering),
 Thomas Berkhout (RMES 2013), Rajeev Kumar (RMES 2015), Julia Gustavsen (Oceanography)

2016), Marina Giacomini (Zoology 2019), Tobias Müller (Geography 2019), Marybel Gomez (Botany 2020)

PhD Comprehensive examiner – Matt Drenner (FRS)

PhD Comprehensives chaired (Mooney, Young, Hong Qian, Sharifi, Mahon)

MSc Exams – external examiner - Lake, Priekshot, Houde, Boucher, Stoudhammer (Kovach), Er, Riedel, Keple, Furay [UVic], Zimmerman, Caron, Ames, Lo, Newsad, Kieran Samuk, Amanda Edworthy, Noel Swain [SFU] Susana Cardenas, Amanda Moreira, Corinna Favaro [SFU], Michael Champion, Samantha James, Megan Szojka

MSc Exams Chaired - Pritchard, Allison, Norquay, Chan, Ferguson, Burwash, Leupin, O'Connor, Bérubé, Aaron, Miquelajauregui, Freeman, Nina Lobo

Visiting students supervised (working in my research group for degrees from elsewhere)

Liliana Garcia, PhD Candidate, University of Vigo, Spain (at UBC June – Aug 2007)

Karolina Leberfinger, PhD Candidate (now completed), Karl Linnaeus University (July – Aug 2009)

Isis Sanpera Calbert, PhD Candidate, University of Barcelona (June – Nov 2009)

Giovany Guevara, PhD Candidate (now completed), Universidad Austral de Chile (Oct – Nov 2009)

Yu'usuke Watanabe, PhD Candidate (now completed), Tokyo University of Agriculture and Technology (Oct – Nov 2012)

Leonie Clitherow, PhD Candidate (now completed), University of Birmingham (July – Aug 2015)

Many interns from AgroParisTech and AgSupDijon, and other institutions in Germany, England and France (Zelie, Amandine, Théophile Antoine, Tina Loustalot, Adeline Baltzinger, ...)

MITACS interns from Brazil (2), Mexico, China, 2018: Michael Kroger, Alena

Sabbatical Guests Hosted (in my laboratory and activities funded through my grants)

Dr. Russell Death, Institute of Natural Resources - Ecology (PN624), Massey University, Private Bag 11-222 Palmerston North, New Zealand (1 month)

Dr. Azim Mallik, Department of Biology, Lakehead University, Thunder Bay, Ontario (12 months)

Dr. Eugen Rott, Institut für Botanik, Universität Innsbruck, Innsbruck, Austria (6 months)

Dr. Luis Epele, CONICET, Argentina (6 months: March – April 2015)

Dr. Isabel Pardo, Department of Biology, University of Vigo, Spain (12 months: Sept 2015 – Aug 2016)

Dr. Arturo Eloegi, Faculty of Science and Technology, University of the Basque Country (5 months: Aug 2017 – Dec 2017)

9. **SCHOLARLY AND PROFESSIONAL ACTIVITIES**

(a) *Areas of special interest and accomplishments*

Research Program

My research program seeks to determine the mechanisms and regulatory processes by which communities are structured, and how population densities within communities are set. My usual approach is to use experimental modulation of one or more variables within a community to test causal predictions. Most of these studies take a mechanistic view to understanding the rates and controls on processes operating within ecosystems. Experiments in combination with descriptive studies have provided a foundation for extending our understanding of how stream and riparian systems function. Indirect and food-web interactions are clearly strong determinants of community organisation and themselves subject to perturbation. I have used these approaches for a variety of basic and applied questions, such as examining the effects of forest management, while maintaining a sound theoretical

foundation. All of these components are destined to provide inputs to synthetic and predictive models of stream and riparian areas that will be designed with management or restoration of natural areas as objectives.

I have worked on many of these projects as collaborations with scientists at other institutions (Naiman [U Washington], Wipfli [U Alaska], Kiffney [US NOAA], Milner [U Birmingham, UK], Soluk [U Dakota], Perrin [Limnotek Ltd], Heard [U New Brunswick], Levings [DFO]), at UBC (Moore, Hinch, Healey, Feller), and with my students and post-doctoral fellows. I have invested considerably in working with teams on several projects and I believe teams are important for ecosystem-scale studies. Our large-scale ecosystem project testing the effectiveness of riparian reserves for stream and riparian systems has been a team collaboration and what I consider one of the biggest contributions of my research program. This project was initiated by Michael Feller and further developed into a broader study when I joined the faculty. Other teams that I have worked with include a Variable Retention project lead by Weyerhaeuser and an attempt to develop a working team for the riparian studies in the Cariboo Region.

There are four interwoven thematic areas in my research program.

Population, community and ecosystem processes in streams, riparian areas, and wetlands: Many of our projects involve experiments to determine the processes and the controls on those processes within communities. In particular, the scaling of various structures and processing, and their non-additive interactions (complex effects) are critical to an understanding of how these natural or modified systems are organized. The primary biological components I have worked on include invertebrates, amphibians, fish, algae, bacteria, and small mammals.

Organic carbon dynamics in small streams: Small streams depend on a variety of sources of fixed carbon, and as donor-controlled pathways primarily from terrestrial environments, provide a strong linkage from watersheds to streams. Modification of riparian vegetation through forest management or succession can have a large effect on the carbon sources.

Applied studies of the effects of land-use (e.g. forestry), contaminants, and other disturbance on streams: As an applied scientist many of our studies address how various alterations from land-use affect natural systems. Various studies have been descriptive and experimental studies of tailed frogs, Pacific giant salamanders, woodland stream biodiversity, heavy metals, acid mine drainage, biomonitoring, and community structure of the lower Fraser River. These studies complement my overall research program by considering various insults to communities and populations as a kind of probe within communities.

Endangered and threatened species associated with streams and riparian areas: There are many species associated with streams and riparian areas that are at risk. My students and I have worked on a number of threatened or endangered species of amphibians. The species include tailed frog (vulnerable), coastal giant salamander (threatened), tiger salamander (BC – endangered), and Oregon spotted frog (endangered globally). The studies include long-term capture-mark-recapture programs, experimental studies of logging impacts on their demography, and experiments of their interactions with other species.

Future Directions

I plan to further move towards ecosystem-scale experiments using small stream basins as experimental units. These are long-term plans and we are studying a series of watersheds that will eventually be manipulated in one way or another. Some examples of the particular watershed-scale studies include applied and basic studies using experimental nitrogen loading, augmenting organic matter to streams to determine the effects of "leakiness" of the system, and continued studies of different harvesting

systems around streams. Small-scale experiments to understand the mechanisms will continue to be a key approach to determining how processes apparent at ecosystem scales are carried through the system. In particular the non-additive, or “complex” interactions of multiple variables will remain one of the key questions of my experimental work.

(b) *Research or equivalent grants (indicate under COMP whether grants were obtained competitively (C) or non-competitively (NC))*

Granting Agency	Subject	COMP	\$CDN Per Year	Year	Principal Investigator	Co-Investigator(s)
Habitat Cons.Fund, BCMOE	Comm.structure of woodland streams, re forest age and logging history	C	\$30,000	92-94	W.E. Neill	J.S. Richardson
Habitat Cons. Fund, BCMOE	The Pacific Giant Salamander: impact and recovery from forest operations	C	\$33,883	94-95	W.E. Neill	J.S. Richardson
Environ.Cda.	Seasonal changes in benthic comm. structure in rivers of Fraser river basin,BC	N/C	\$17,667	95-97	J.S. Richardson	
Habitat Cons.Trust Fund,BCMOE	Population persistence of the Pacific Giant Salamander in the face of land-use alterations.	C	\$31,666	95-01	J.S. Richardson	W.E. Neill
For.Renewal Plan Biodiv.Res. BC	Biodiversity of stream invertebrates in small streams used by Pacific Giant Salamanders.	C	\$21,500	95-96	J.S. Richardson	W.E. Neill
Forest Ren.Plan, Anim.Inventry BC	Distribution of Pacific Giant Salamanders in 95-99 timber cutblocks in the Chilliwack Valley	C	\$31,550	95-96	W.E. Neill	J.S. Richardson
Environment Canada	Effects of contaminants on small stream ecosystems in the lower Fraser basin: mesocosm studies	N/C	\$8,666	94-97	J.S. Richardson	
Long Beach Model Forest, Nat.Res.Cda.	Biology and geomorphological classification of headwater streams in the Long Beach Model Forest	N/C	\$7,004	96	J.S. Richardson	
FRBC Research Program	Ecology of tailed frogs and the effects of forest practices	C	\$208,000	96-01	J.S. Richardson	F.L. Bunnell
FRBC Research Program	Hydraulic refugia of stream organisms from floods	C	\$59,998	96-97	J.S. Richardson	
FRBC Research Program	Stream benthos responses to riparian management.	C	\$121,000	96-01	J.S. Richardson	

FRBC Research Program	Population persistence of the Pacific Giant Salamander in the face of land-use alterations.	C	\$96,000	96-01	W.E. Neill	J.S. Richardson
Nat. Science Foundation (US)	Interguild interactions in communities of benthic stream invertebrates.	C	\$50,000 US	96-99	S.B. Heard	J.S. Richardson
FRBC Research Program	Influence of reserve strip width on riparian and stream ecosystems: invertebrate responses to management.	C	\$108,000	97-01	J.S. Richardson	
US Nat. Marine Fisheries Serv. NOAA	Influence of reserve strip width on riparian and stream ecosystems: invertebrate responses to management.	C	\$25,000	98-02	J.S. Richardson	
Habitat Conservation Trust Fund	Tiger Salamanders: habitat use and population ecology	C	\$22,000	97-01	J.S. Richardson	W. Klenner
Habitat Conservation Trust Fund	Influence of reserve strip width on riparian and stream ecosystems: amphibian communities	C	\$20,854	98-01	J.S. Richardson	
NSERC (Canada)	Resource limitation in streams and the role of organic matter sources.	C	\$12,600	99-03	J.S. Richardson	
HCTF & Fraser River Estuary Management Program	Fish communities as ecosystem indicators for a changing system: the lower Fraser River	C	\$30,000	2001 - 2005	J.S. Richardson	
Forest Renewal BC and Forestry Innovation Investment	Ecology and management of riparian - stream ecosystems: a large scale experiment using alternative streamside management techniques	C	\$210,677	01-04	J.S. Richardson	Feller, Hinch, Moore, Kiffney, and Mitchell
Forest Renewal BC and Forestry Innovation Investment	Influence of different forest practices on the biodiversity and productivity of macroinvertebrate communities in small headwater streams in the interior of British Columbia	C	\$66,339	01-03	J.S. Richardson	
Forest Renewal BC and Forestry Innovation Investment	Trophic flows across habitats in riparian forest ecosystem: terrestrial-aquatic linkages	C	\$61,457	01-03	J.S. Richardson	
Forest Renewal BC and Forestry Innovation Investment	Variable retention and the conservation of small streams and their riparian areas	C	\$374,178 (15% to JSR)	01-03	Bill Beese, Weyerhaeuser	J.S. Richardson, Bilby, Bothwell, Moore, Hogan, Macdonald

BC Ministry of Water, Land & Air Protection	Status of the signal crayfish, <i>Pacifastacus leniusculus</i> in BC	C	\$5,000	02-03	J.S. Richardson	
Forestry Innovation Investment	Amphibian populations as indicators of forest condition and recovery from forest harvesting of riparian areas in a coastal forest	C	\$26,005	02-04	J.S. Richardson	
BC Water, Land and Air Protection	Time series analysis of water quality data	NC	\$55,000	03	J.S. Richardson	
NSERC (Canada)	Variation in detritus-based food webs and community structure based on quality of organic matter	C	\$20,000	03-07	J.S. Richardson	
Sustainable Forest Management Network	Ecological and geographical gradients underlying stream responses to riparian management – towards ecologically-based guidelines	C	\$75,000 (52%)	03	J.S. Richardson	Plamondon, Moore, Mackereth, Mallik, Scruton, Macdonald, Cunjak
Forest Innovation Investment	Demographic and viability analysis of the threatened coastal giant salamander in response to forest harvesting	C	\$47,659	03-04	J.S. Richardson	
Habitat Conservation Trust Fund	Recovery potential of amphibian communities	C	22,000	04-05	J.S. Richardson	
Forest Sciences Program (B.C.)	Ecology and management of riparian - stream ecosystems: a large-scale experiment using alternative streamside management techniques	C	194,920 (60%)	04-07	J.S. Richardson	Feller, Hinch, Moore, Kiffney, and Mitchell
Forest Sciences Program (B.C.)	EpHects" - a cumulative effects analysis method using automated continuous pH measurements in streams.	C	29,000	04-05	Quilty & Richardson	
Forest Sciences Program	Cumulative watershed effects of forestry practices on stream ecosystems	C	85,388	04-07	Zhang	Richardson
Networks of Centres of Excellence, Canada Water Network	Changes in communities of small streams of the Fraser River lowlands	C	12,000	05 - 07	Richardson	

Forest Sciences Program	Long-term trends in amphibians in riparian reserves: are riparian reserves effective for their conservation?	C	22,281	06 - 09	Richardson	
Forest Sciences Program	Downed wood in riparian areas and its contribution to stand-level biodiversity	C	32,252	06 - 09	Richardson	
Forest Sciences Program	Alternative indicators of the integrity of stream function as an assessment of sustainable forest management	C	74,283	06 - 09	Richardson	
Forest Sciences Program	Recovery processes of small streams and their riparian areas from clear-cutting and partial harvest riparian management	C	128,585 (33%)	07 - 10	Richardson	Moore, Kiffney, Feller, Mitchell, Hinch
Forest Sciences Program	Biogeochemical indicator and threshold for assessing ecological impacts of riparian forest management on downstream ecosystems	C	74,492	07 - 10	Sakamaki	Richardson
Forest Sciences Program	Assessing the sensitivity of streams to riparian changes: Does channel geomorphology determine how tightly forests and small streams are linked to downstream reaches?	C	71,126	07 - 10	Hoover	Richardson
Forest Sciences Program	Ecosystem functioning in small streams and their riparian areas in response to partial harvest riparian management	C	75,420	07 - 10	Marczak	Richardson
Forest Sciences Program	Conservation genetics and ecology of the threatened Coastal Giant Salamander in managed forests of British Columbia: setting priorities for an integrative species recovery plan.	C	47,133	08 - 11	Richardson	Dudaniec
Canadian Wildlife Federation	Conservation genetics and ecology of the threatened Coastal Giant Salamander	C	30,000	10 - 11	Richardson	Dudaniec
NSERC	Resource heterogeneity and the environmental basis of productivity in flowing waters	C	19,700	08 - 13	Richardson	
Canadian Wildlife Federation	Determining critical instream flow needs for Nooksack Dace	C	17,900	11 - 13	Richardson	
Pacific Institute for Climate Solutions	Assessing the potential aquatic habitat value of streams responding to a changing climate	C	20,750	11 - 13	Richardson	Allen, Moore

Canadian Wildlife Federation	Identification of critical habitat for Great basin spadefoot toads (<i>Spea intermontana</i>) within the southern interior of British Columbia	C	22,000	12-14	Richardson	
NSERC Strategic Network	NSERC Canadian Network for Aquatic Ecosystem Services	C	4416625 (~2%)	12 - 17	Jackson	+14 others
NSERC	Population and community consequences of cross-ecosystem resource subsidies	C	33,000	13 - 18	Richardson	
NSERC Strategic Grant	Cumulative effects in a riverscape across scales: thresholds of disturbance in ecosystem integrity	C	390,760	14 - 17	Richardson	Moore, Buttle, Morin
Canadian Wildlife Federation	Conservation of coastal tailed frogs in relation to run-of-river hydropower: effects assessment and mitigation development	C	18,000	15 - 16	Richardson	
WaterWorks (EU)	SOURCE STREAM (headwater) PROTECTION from forest practices: what are the costs and benefits, and how best to do it?	C	115,000	17 - 20	Richardson	Muotka, Kuglerová
National Wetlands Conservation Fund (Env Can.)	Optimising the effectiveness of restoration of Black Cottonwood ecosystems by linking with hydrological and geomorphic site characteristics, and plant traits	C	21,549	17 - 19	Richardson	
NSERC	Population and food web responses to variation in rates and timing of pulsed, cross-ecosystem resource subsidies	C	40,000	18 - 23	Richardson	
BC Ministry of Environment	Early life history ecology of white sturgeon	NC	24,500	19-21	Richardson	

(c) *Research or equivalent contracts (indicate under COMP whether grants were obtained competitively (C) or non-competitively (NC)). NONE*

(d) *Invited Presentations (defined as travel being paid by inviting organization or invitation to a special series: regular invitations to be part of special sessions at conferences and symposia not listed) - International invitations noted with an asterisk*

* “Legacy effects from forest harvesting and recovery of ecosystem functions in streams and riparian areas” 22 August 2018, Swedish Agricultural University, Umeå, Sweden.

- * “Controls on rates of ecosystem functions by food web structure and cross-ecosystem fluxes” 24 March 2017, Dept of Zoology, University of Otago, Dunedin, NZ
- * “Controls on rates of ecosystem functions by food web structure and cross-ecosystem fluxes” 21 March 2017, School of Biological Sciences, University of Canterbury, Christchurch, NZ
- * “Protecting fluvial networks at the source” 28 Sept 2016, Krycklan Symposium, Umeå, Sweden
- * “Linking the ecology of streams and the forest – experimental studies of cross-ecosystem resource flows and population responses” 12 May 2016, Beijing Forestry University, China
- * “Interactions of food-web structure and ecosystem functions in freshwaters and their riparian zones” 9 December 2015, IRSTEA (Université de Lyon), Lyon, France
- * “Interactions of food-web structure and ecosystem functions in freshwaters and their riparian zones” 20 November 2015, ECOBIO, Université de Rennes, France
- * «Interdépendance entre les écosystèmes dulçaquicoles et rivulaires liée aux échanges de matière et d'énergie » 18 November 2015, Agro, Environnement, Développement durable. Agrocampus Ouest, Rennes, France
- * “Interactions of food-web structure and ecosystem functions in freshwaters” 25 September 2015, Department of Biology, University of Iceland, Reykjavik, Iceland
- * “Stream-terrestrial interactions and ways to protect freshwaters from land-uses” 21 April 2015, Department of Environmental Science, Xi'an Jiaotong-Liverpool University, Suzhou, China
- * “Stream-terrestrial interactions and ways to protect freshwaters from land-uses” 16 April 2015, Faculty of Forestry, Nanjing Forestry University, Nanjing, China
- * “Why we need to protect the forest-stream connection to ensure water security and ecosystem services” 27 November 2013, Keynote talk at Symposium on Hills, Humans and Oceans, Kyoto, Japan.
- * “Cross-ecosystem resource subsidies across the stream-land interface and land-use effects on streams” 26 November 2013, Department of Biology, Kobe University, Japan.
- * “Forest management along riparian areas – small streams need more protection” 7 June 2013, Beijing Forestry University, China.
- * “Resource exchanges across freshwater-terrestrial boundaries and feedback processes between adjacent ecosystems” 3rd BioHydrology Conference: Water for Life, 22 May 2013, University of Konstanz–Landau, Germany.
- * “Cross-ecosystem resource subsidies across the stream-land interface and land-use effects on streams” The William Main Lecture, 15 April 2013, University of California Berkeley, USA.
- * “Cross-ecosystem subsidies to streams: progress on effects of quality and timing.” 6 July 2012, University of Hokkaido, Dept of Environmental Science, Japan.
- * “Water connects all of us to each other and to our landscape.” 15 June 2011, Te Awa, Public Lecture, and “Rare and extreme events in river landscapes have lasting impacts.” 21 June 2011, The

Manawatu Lecture, Royal Society of New Zealand Manawatu Branch, Palmerston North, New Zealand.

- * “Experimental tests of the controls on biodiversity and productivity of stream ecosystems.” 4 Nov 2010, University of Oulu, Finland.
- “Learning how to protect water for environmental and human needs in a variable world.” (keynote) 31 August 2010, British Columbia Water Symposium, Kelowna, BC.
- * “Controls on organic matter decomposition in streams and effects on food webs.” 4 February 2010, IGB – Leibniz Institute for Freshwater Ecology and Inland Fisheries, Berlin, Germany.
- * “Experimental tests for the controls on biodiversity and ecosystem function in streams.” 29 April 2009, University of Vienna, Austria.
- * “The source waters: the ecological roles of headwater streams & threats to catchment integrity.” 29 October 2008, keynote for IV Congreso Argentino de Limnologia, Bariloche, Argentina.
- * “Biomonitoring of streams for environmental impacts on water quality and aquatic life.” 31 October 2008, Universidad Nacional del Comahue, Neuquen, Argentina.
- * “Donor-controlled ecosystem subsidies and facilitation are important processes in freshwater foodwebs.” 1 February 2008, Institut für Gewässerökologie und Binnenfischerei (IGB), Germany.
- * “Donor-controlled ecosystem subsidies and facilitation are important processes in freshwater foodwebs.” 30 January 2008, Wageningen Universiteit, Netherlands.
- * “Riparian Management: are we there yet?” 7 November 2007, Oregon State University, OR, USA.
- * “A look into the future for rivers and lakes in the 'wilderness' of western Canada” 22 April 2007, University of Innsbruck, Austria.
- * “Management of catchments for the protection of aquatic life and other resources starts with the headwaters” 21 April 2007, Natural History Museum, Trento, Italy.
- * “Experimental approaches in stream ecology” 28 February 2007, University of Birmingham, UK.
- * “Does biodiversity matter to ecosystem functions, and how can that be determined?” Les Grands Seminaires de l’Observatoire Midi-Pyrenées; and “Biodiversité: du jardin d’Eden aux invasions biologique” (with Eric Tabacchi, CNRS, Toulouse) Les Soirées Scientifique de l’Observatoire Midi-Pyrenees. 23 January 2007, Toulouse, France
- * “Ecology of coastal rivers in Pacific coastal rain forests” Exploring the Scientific Basis for Stewardship & Restoration of Coastal Rivers” 12 April 2006, Seattle, WA.
- * “Experimental tests of the processes controlling complex interactions in stream food webs” and “Organic matter dynamics in small streams of coastal BC” 25 – 27 January 2006, University of Alaska, Fairbanks, AK.
- * “The biology of headwater streams and their riparian areas in forested landscapes: Where to next?” 18 November 2005. Oregon Headwaters Co-operative, Corvallis, OR.
- “Experimental tests of the processes controlling complex interactions in stream food webs” 15 September 2005, Dept of Biological Sciences, University of Alberta, AB.
- “Evaluating effectiveness and uncertainty of forest management around small streams in British Columbia” FORWARD Annual Meeting, 16 May 2005, University of Alberta, AB.

- “An experimental approach to understanding the linkages between ecosystems: forest-stream interactions and management” and “Sustainable forest management and protecting aquatic ecosystems: Can we have it all?” 22 and 23 October 2004, Lakehead University, ON.
- “Meeting the conflicting objectives of stream conservation and land use through riparian management: another balancing act.” Keynote speaker. 28 April 2004. Forest-Land-Fish Conference II – Ecosystem Stewardship Through Collaboration, Edmonton, AB.
- “Experimental tests of processes regulating complex interactions in stream and riparian food webs” 2 February 2004. Dept of Biological Sciences, University of Calgary, AB.
- * “Understanding complex interactions in stream and riparian food webs, and management effects” 20 November 2003. School of Natural Resources, Ohio State University, OH.
- * “Amphibians associated with headwater streams and population responses to forest management” 15 April 2002. College of Forest Resources, University of Washington, Seattle, WA.
- * “Experimental studies of the effects of riparian management on communities of small streams: establishing causal mechanisms.” 30 October 2001. Headwaters Research Cooperative, Oregon Department of Forestry, OR.
- “Forestry and aquatic resources: biodiversity, water quality, and ecosystem integrity. Oh yes, ...and salmon” 15 August 2001. Canadian Institute of Forestry Annual Meeting. Whistler, BC.
- “Species at risk - amphibians and other life on the edge in British Columbia”. Keynote speaker. 17 February 2001. Canadian Society of Environmental Biologists, Vancouver, BC.
- “Are our current guidelines for riparian reserves doing the job?” 25 January 2001. Coastal Silviculture Committee, Winter Meetings, Nanaimo, BC.
- “Controls on the productivity of food webs of small streams: seasonality and resource limitation” 23 November 2000. Bamfield Marine Laboratory, BC.
- * “Headwater streams, forest harvesting, and the conservation biology of tailed frogs” 20 April 2000, Department of Natural Resource Sciences, Washington State University, Pullman, WA.
- * “Controls on the productivity of food webs of small streams: seasonality and resource limitation” 13 April 2000, School of Fisheries, University of Washington, Seattle.
- * “Ecological objectives for stream and watershed restoration along the Pacific coast of North America” International Workshop on Environmental Hydrodynamics and Ecological River Restoration in Cold Regions, 22 September 1998, Trondheim, Norway.
- “Fish don’t eat trees so why do we need to leave riparian buffers along streams?” National Rivers Conference, 3 May 1998, Richmond, BC.
- * “Conservation of stream ecosystem dynamics and biodiversity through streamside management” 19 November 1997. World River Conference, Gifu, Japan.
- * “Forest management and the effects on food webs of temperate rainforest streams of Canada’s Pacific coast” 17 November 1997. Hokkaido University, Sapporo, Japan.
- “Do fish eat trees? Stream food webs and forest harvest practices” 27 September 1996. Natural Resources and Environmental Studies, University of Northern British Columbia, Prince George.
- “Epidemiology as a branch of ecology: feedbacks between disciplines.” 16 July 1995. Canadian Association of Veterinary Epidemiology and Preventive Medicine Annual Meeting, Victoria, BC.

- * "Regulation of foodweb structure in temperate rainforest streams." 6 March 1995. and "Forestry impacts on stream communities in the Pacific Northwest." 7 March 1995. University of Maryland.
- * "Autocorrelations and discontinuities in ecosystems across space, time, and disciplines: the case of the Fraser River." 11 September 1994. Sampling Designs in Aquatic Networks Across Scales Workshop, Mt Hood, Oregon. Center for Analysis of Environmental Change.
- * "From organic matter to fish: stream food webs and forest harvest practices." 13 May 1994. EAWAG, Swiss Federal Institute of Environmental Science and Technology, Zürich, Switzerland.
- * "Foodwebs of temperate rainforest streams: rate-limiting processes and community structure." 17 March 1994. Department of Zoology, University of Hong Kong, Hong Kong.
- "From organic matter to fish: stream food webs and forest harvest practices." 7 March 1994. Department of Forest Sciences and Fisheries Centre, University of British Columbia.
- "Forest-stream interactions: understanding the connections and predicting the consequences." 26 April 1993. Scarborough Campus, University of Toronto, ON.
- "Forest-stream interactions: population dynamics of lotic organisms limited by forest-driven processes." 10 March 1993. West Vancouver Laboratory, Department of Fisheries and Oceans, BC.
- "Manipulating stream food webs: limits to productivity and forestry-stream interactions." 25 September 1992. Department of Biology, York University, Ontario.
- "Food limitation of stream benthos: implications for community organization." 10 March 1992. Pacific Biological Station, Fisheries and Oceans, Nanaimo, BC.
- "Population and community consequences of food limitation in west coast streams." 7 June 1990. Département de Biologie, Université Laval, Québec.
- "Natural disturbances in streams: how might they affect stream communities?" 1 March 1986, A Symposium on the Role of Disturbance, Pacific Ecology Conference, Vancouver, BC.
- * "Abundance patterns of seston feeding invertebrates in lake-outlet streams: why is *Neureclipsis bimaculata* restricted to these habitats?" 19 November 1984, Department of Fisheries and Wildlife, Oregon State University, Corvallis, OR.

(e) *Other Presentations*

Regular conference presentations (average of about 5 - 8 per year); departmental seminars; talks to community groups.

Coastal Silviculture Committee Summer Field Program, June 2001

(f) *Other*

(g) *Conference Participation (Organizer, Keynote Speaker, etc.)*

Regular conference participation (international and regional – about 5 to 8 meetings a year) – presentations given at most conferences, as well as by my students and postdocs on which I am usually an author (abstracts and titles not listed – estimated 15 presentations per year on which I am an author). I chair and/or organise sessions at conferences at least once per year.

Organizer – Centre for Applied Conservation Research Symposium, organized the first 6 symposia up to and including 2003

Co-organizer: Headwater systems, April 2000 - co-organizer for the meeting along with Roy Sidle & Dan Moore

Keynote speaker:

- Forest-Land-Fish Conference II – Ecosystem Stewardship Through Collaboration, Edmonton, AB 28 April 2004.
- Annual Meeting of the Canadian Society of Environmental Biologists, 2001.
- IV Congreso Argentino de Limnologia, Bariloche, Argentina, 2008.
- 3rd BioHydrology Conference: Water for Life, 22 May 2013, University of Konstanz–Landau, Germany.
- Japan – Mountains to Coast
- RENNES – Agro, Environnement, Développement durable

Organizing committee member : Headwater Ecosystems and their management - member of the organizing committee for this regional meeting held at UBC 19-21 February 2002.

Organizing Committee Member, American Society of Limnology and Oceanography Annual Meeting, Victoria, 2002

Chair, Organizing Committee, North American Benthological Society Annual Meeting, UBC, 2004.

Organiser: Biomonitoring 2003, Biomonitoring 2005, Biomonitoring 2006 (all at UBC)

Program co-chair, North American Benthological Society Annual Meeting, Anchorage, Alaska, 2006

Organizing committee member : Headwater Ecosystems and their management - member of the organizing committee for this regional meeting held at UBC 19-21 February 2007.

Workshop invitations (recent): Future Forest Ecosystems Monitoring, Victoria, BC, 15 January 2009 (organised by Dr. John Innes, BC government-funded); Linking hydromorphology and ecology, Aberdeen, Scotland, 1 – 5 March 2009 (organised by Dr. Hamish Moir, Scottish Environment funding); Workshop to Develop a National Network of Conservation Professionals to Address Complex and Pressing Conservation Problems in Canada, Ottawa, ON, 5 – 7 April 2009 (Organised by Dr. Steven Cooke, Carleton, NSERC-funded); Conservation of the Fraser River Estuary (organised by Dr. Tara Martin)

10. **SERVICE TO THE UNIVERSITY**

(a) *Memberships on committees, including offices held and dates*

Safety committee: member 1996-1998

Fire Safety Director: Faculty of Forestry, UBC. 1999 - 2005

Best graduating essay selection committee 2000

Best graduating thesis selection committee 2001

Hiring committee member: departmental technician 2001

Hiring committee member: faculty of forestry web specialist 2001

Faculty IT committee: member 2002 – present

College of Life Sciences Graduate Student Evaluation Committee 2002 – 2003

Search Committee: New head of Geography, UBC 2008-2009

Search Committee: NSERC-Industry chair in Forest and Forest Products Entomology 2009

- (b) *Other service, including dates*
 Fisheries Centre Review committee for Dean of Science: complete review of the centre with recommendations to the Dean Simon Peacock for how to advance

11. **SERVICE TO THE COMMUNITY**

- (a) *Memberships on scholarly societies, including offices held and dates*

Trustee and Chair: (1999-2003) North American Benthological Society Endowment Fund.

Member: Place and nominations committee - North American Benthological Society (1999 and 2000).

Member: North American Benthological Society

Member: Ecological Society of America

Member: British Ecological Society

Member: American Society of Limnology and Oceanography

Chair (2010 – 2014) Society for Freshwater Science, Award of Excellence and Distinguished Service Award Subcommittee

- (b) *Memberships on other societies, including offices held and dates*

- (c) *Memberships on scholarly committees, including offices held and dates*

- (d) *Memberships on other committees, including offices held and dates*

Co-chair: Oregon Spotted Frog Recovery Team (Listed 'endangered' in Canada). 1999 – 2003, currently a team member: 2003 - present

Member: South Okanagan-Similkameen Conservation Program Scientific - Technical Committee. 1999 – 2005

Member: Scientific Advisory Committee, Kenai River Watershed Studies Program, Alaska (2002-2003).

Member: Rocky Mountain tailed frog recovery team (2002 to 2004)

Member: Coastal giant salamander recovery team (2004 – present)

Member: Freshwater fishes of BC recovery team (2003 – 2012)

Member and Co-chair: South Coast Conservation Program – BC Government-nominated consortium for co-ordinating recovery teams and other conservation efforts in the lower mainland of BC (member 2005 – 2013; Chair 2013 to present).

Member: Scientific Specialist Committee for Arthropods, Committee on the Status of Endangered Wildlife in Canada (COSEWIC) (2014 – present)

Member: Riparian Prescriptions Workgroup, Washington State Department of Natural Resources (2019 – present)

Member: Knowledge Synthesis and Transfer, Aquatic Habitat Canada (a division of Wildlife Habitat Canada). (2019 – present)

(e) *Editorships (list journal and dates)*

Editorial Board, Associate Editor – *Journal of Applied Ecology* (British Ecological Society journal), 1 Oct 2005 – 1 January 2012 (impact in 2008 – 4.56)

Editorial Board, Associate Editor – *Journal of the North American Benthological Society*, 1 June 2002 – 30 May 2007 (impact in 2008 – 2.36)

Editorial Board, Associate Editor – *Canadian Journal of Fisheries and Aquatic Sciences* 1 June 2005 – present (impact in 2008 – 2.28)

Guest Associate Editor – *Canadian Journal of Forest Research* (2002, 2005) (impact in 2004 – 1.531)

Guest Associate Editor – *Canadian Journal of Fisheries and Aquatic Sciences* (2015) Special issue based on an American Fisheries Society symposium (impact in 2015 – 1.531)

(f) *Reviewer (journal, agency, etc. including dates)*

Reviewer for: American Midland Naturalist, Aquatic Sciences, Archiv für Hydrobiologie, Biodiversity and Conservation, BioScience, Boreal Environment Research, Canadian Entomologist, Canadian Journal of Fisheries and Aquatic Sciences, Canadian Journal of Forest Research, Canadian Journal of Zoology, Conservation Biology, Ecography, Ecological Indicators, Ecological Applications, Ecological Monographs, Ecology, Ecology Letters, Écoscience, Entomologia Experimentalis et Applicata, Environmental Biology of Fishes, Forest Ecology and Management, Freshwater Biology, Freshwater Science, Frontiers in Ecology and Environment, Functional Ecology, Global Change Biology, Hydrobiologia, International Review of Hydrobiology, Journal of Animal Ecology, Journal of Applied Ecology, Journal of Aquatic Ecosystem Health, Journal of Biogeography, Journal of Herpetology, Journal of the North American Benthological Society, Marine Ecology (Progress Series), Nature Climate Change, New Zealand Journal of Marine and Freshwater Biology, Oecologia, Oiko, PLOS One, Proceedings of the National Academy of Sciences, River Research and Applications, Transactions of the American Fisheries Society, Trends in Ecology and Evolution (average of about 15 reviews per year in addition to my editorial duties while I was Associate Editor, since January 2013 about 25 per year)

Reviewer – Pacific Scientific Advice Review Committee, Fisheries and Oceans Canada. Marine and estuarine riparian habitats and their role in coastal ecosystems. June 2001

Grant proposal Reviews

Member: Science Council of BC: review panel member for Forest Renewal BC research program. 1996-2001.

Review panel member for Forest Sciences Program (BC) – 2003-2004, 2004-2005

Portuguese Science Foundation – Fundação para a Ciência e a Tecnologia – panel member 2009 – 2012

Portuguese Science Foundation - Fundação para a Ciência e a Tecnologia – reviewer 2012 – 2014 (about 7 to 10 proposals/y)

National Science Foundation (US) – grant proposal reviews (2)

Living Legacy Trust, Ontario (a forestry research granting agency) - grant proposal reviews (6)

Natural Sciences and Engineering Research Council (Canada) – grant proposal reviews (13)

Hong Kong Research Grant Council (ref. # HKU 7619/05M) (2004 – 2009) – grant proposal reviews (6)

France – Investissement de l’avenir - 2011 (1)

Promotion reviews (no details for privacy reasons)

University of Birmingham, University of Alaska – Fairbanks, Massey University (2), University of Washington (2), Michigan State University, University of Leeds, University of Toronto (2), University of Western Ontario, University of Wyoming, Otago University (2), Oregon State University, U of Hong Kong, Ryerson University, Washington State University

(g) *External examiner (indicate universities and dates)*

M.Sc., Chris Teichreb, Simon Fraser University, July 1999

M.Sc., Nicole McCutchen, Simon Fraser University, May 2001

PhD examiner, Antti Haapala, University of Jyväskylä, Finland, May 2001.

M.Sc., Eric Lamb, Lakehead University, Thunder Bay, ON. April 2002.

M.Sc., Andrea Riedel, Simon Fraser University, August 2002.

M.Sc., Paula Furay, University of Victoria, Apr 2003.

PhD examiner, Deborah Walks, University of Toronto, Feb 2003.

PhD examiner, Robyn Irvine, University of Calgary, Feb 2004.

PhD examiner, Cameron Stevens, University of Alberta, Sept 2005.

PhD examiner, Brent Wootton, Trent University, ON, Apr 2006.

PhD examiner, Joanne Clapcott, University of Tasmania, August 2007

PhD examiner (opponent), Rob J.M. Franken, Wageningen Universiteit, Netherlands, Nov 2007

PhD examiner, Alistair Danger, Deakin University, Australia, Nov 2007

M.Sc., Shah Newaz, Lakehead University, Thunder Bay, ON. Aug 2009

PhD examiner (opponent), Pauliina Louhi, University of Oulu, Finland, Nov 2010.

PhD examiner, Liliana García Lago, University of Vigo, Spain, Jan 2012

M.Sc., Noel Swain, Simon Fraser University, Jan 2013

M.Sc., Corinna Favaro, Simon Fraser University, Dec 2013

Ph.D. examiner, Maite Arroita Azkarate, Universidad del País Vasco, Spain (Basque Region), Oct 2015

Ph.D. examiner, Ross Vander Vorste, Université Claude Bernard (Lyon), France, Nov 2015

Ph.D. examiner, Melissa Kampt, Monash University, Melbourne, Australia 2016

Ph.D. examiner, Meritxell Abril, University of Barcelona, Spain, Apr. 2017

Ph.D. examiner, Thibaut Rota, University of Toulouse, Oct. 2018

(h) *Consultant (indicate organization and dates)*

(i) *Other service to the community*

Biodiversity Research Council of BC: member. 1998-1999.

Scientific advisor for British Pacific Properties' tailed frog monitoring program. 1998- present

TV interviews – Pacific giant salamanders (CBC), amphibians (Discovery), Oregon spotted frog (Discovery), bullfrog (Global), Carbon dioxide from predator loss in streams (Global); Low flow and temperatures

Radio interviews – tiger salamanders (CBC Kelowna); Carbon dioxide from predator loss in streams (CBC)

Newspaper articles – riparian management in BC (Sun - Gordon Hamilton), south Okanagan newspapers about tiger salamanders; low flow and temperatures; etc.

Presentation about urban wildlife for the Urban Stewardship Program

Musqueam Creek Day – led tours to describe fish and fish habitats, and manned a booth to provide information, 28 July 2001.

Selection committee for associate editor for Journal of Ecosystem Management, SIFERP 2000

Public talks: Langley Field Naturalists (2010); Nature Vancouver (2011); Abbotsford Field Naturalists (2011); Wetlands Keepers – “Wetlands – what lurks below” (2012); Beaty Biodiversity Museum – “Caddisflies are way cool ...” (2012); Let's Talk Science – 200+ public school students (2012); Fukuoka Jonan program – 20 Japanese High School students (2012); Indian Forest Service – Water Management in Canada (twice 2012); Beaty Biodiversity Museum – “Dragonflies are way cool ...” (2013)

Amphibians of the Fraser Valley: at risk and declining. 15 Jan 2002, Richmond Nature Park, BC.

Endangered amphibians, Restoration Series, U. Victoria, Oct 2001

Endangered species, south Surrey rest home, Nov 2004.

Organiser of benthic biomonitoring workshops (2003, 2005, 2006)

Conference special session organiser - regularly

12. **AWARDS AND DISTINCTIONS**

(a) *Awards for Teaching (indicate name of award, awarding organizations, date)*

(b) *Awards for Scholarship (indicate name of award, awarding organizations, date)*

Appointment to the Peter Wall Institute for Advanced Studies, Early Career Scholars, UBC – Sept 2004

NSERC postgraduate scholarship 1980, 1981

NSERC postgraduate scholarship 1983, 1984, 1985

NSERC post-doctoral fellowship 1989, 1990

Visiting scientist in a government laboratory fellowship 1993

(c) *Awards for Service (indicate name of award, awarding organizations, date)*

(d) *Other Awards*

Best of Way Cool 2012 – winner for the “Way cool” seminar series at Beaty Biodiversity Museum

13. OTHER RELEVANT INFORMATION (Maximum One Page)

Publications and authorship

I work very diligently with my students (post-graduate and undergraduate) and post-doctoral fellows to develop our ideas and designs for testing them. Among the rewards of mentoring students and post-doctoral fellows are the exchanges of ideas, inputs into projects, and the eventual publication of their work. I have been particularly strident about making sure that we strive to publish all the work from our research efforts. My students and post-doctoral fellows have been very successful in publishing their work and I have made large contributions to the work that each of them have done, and as such I am an author on all their work. In some cases I have had to do the majority of the writing in order to get a thesis into manuscript format, but I have always kept the student as the first author, as it is more important for their career progress to have senior authorship. All of the projects have been funded by grants for which I had the lead or a major role in securing the funding. Our convention is typically that the order of authorship represents the order of the magnitude of the contributions from the people involved, in terms of intellectual contribution and amount of work.

Choice of outlet for publications

My research efforts are most suited for the ecological and aquatic biology journals, and I publish in both applied and basic science journals depending upon the particular topic of the paper. In my field there are many highly-ranked, international journals and I aim to publish my work there, for instance *Ecology*, *Ecological Applications*, *Journal of Animal Ecology*, *Journal of Applied Ecology*, *Proceedings of the Royal Society of London B*, *Freshwater Biology*, and *Canadian Journal of Fisheries and Aquatic Sciences*. Some of my papers have been as part of a series of papers in *Canadian Journal of Forest Research*, *Journal of the American Water Resources Association* (papers in 2 special issues: Small streams and their riparian areas, and the importance of ecosystem services of small streams on downstream rivers [related to the US Clean Water Act restrictions by the US Supreme Court]), (two issues), *Canadian Journal of Fisheries and Aquatic Sciences* (cross-ecosystem resources subsidies), and *Forest Sciences* (special issue on the roles of small streams in landscapes, including managed forests). There are many other journals that I also use as outlets for particular kinds of publications that have readerships interested in particular topics, rather than more broadly-based journals.

Achievements of our research group:

A large number of my graduate students and Post-doctoral fellows have gone on to work in consulting or for government agencies, or have moved on to further degrees. Ten have gone on to become professors (Xi'an Jiaotong-Liverpool University, University of Montana, Université de Toulouse, Tohoku University, University of Hokkaido, University of Maine, Kobe University, Florida International University, Macquarie University, Utah State University, Swedish Agricultural University [SLU, Umeå]) and another is working as an Instructor at UBC. Students and former post-doctoral fellows work as researchers for Fisheries and Oceans Canada, US Department of Commerce NOAA Fisheries, BC Ministry of Environment, University of Oulu, and Countryside Council for Wales. Other former students and post-doctoral fellows have positions in consultancies. The

majority of the former members of my research group have published their work in international, peer-reviewed journals.

Metrics

H-score = 42, citations = 6585 – Web of Science (all databases; 13 Sept 2020) Author = (Richardson JS NOT Richards JS NOT Gainza P NOT Doroszko A NOT Montelione GT NOT Wong G) AND Address = (BC OR Alberta OR Simon Fraser OR Toronto OR Ontario OR West Vancouver OR British Columbia).

Google Scholar h-score = 55: <https://scholar.google.ca/citations?user=xPsJZQcAAAAJ&hl=en>

Clarivate researcher number: <http://www.researcherid.com/rid/G-1513-2012>

ORCID number <http://orcid.org/0000-0001-8135-7447>

THE UNIVERSITY OF BRITISH COLUMBIA***Publications Record*****SURNAME:** RICHARDSON**FIRST NAME:** John**Initials:****MIDDLE NAME:** Stuart**Date:** Nov 2020**1. REFEREED PUBLICATIONS** (publications with students and post-doctoral fellows underlined)(a) *Journals* (total: 177)

Siddig, A.A.H., **J.S. Richardson** & C.F. Dormann. 2020. Drought amplifies the impacts of salt pollution in pond ecosystems: an experimental exploration. *Fundamental and Applied Limnology* 194:1-9.

Kuglerová, L., J. Jyväsjärvi, C. Ruffing, T. Muotka, A. Jonsson, E. Andersson & **J.S. Richardson**. 2020. Cutting edge: A comparison of contemporary practices of riparian buffer retention around small streams in Canada, Finland and Sweden. *Water Resources Research* 56(9): e2019WR026381 doi: 10.1029/2019WR026381

Cantonati, M., R.J. Fensham, L.E. Stevens, R. Gerecke, D.S. Glazier, N. Goldscheider, R.L. Knight, **J.S. Richardson**, A.E. Springer & K. Tockner. An urgent plea for global spring ecosystem protection. *Conservation Biology* accepted doi: 10.1111/cobi.13576

Kehoe, L.J., J. Lund, L. Chalifour, Y. Asadian, E. Balke, S. Boyd, D. Carlson, J.M. Casey, B. Connors, N. Cryer, M.C. Drever, S. Hinch, C. Levings, M. MacDuffee, H. McGregor, **J. Richardson**, D.C. Scott, D. Stewart, R.G. Vennesland, C.E. Wilkinson, P. Zevit, J.K. Baum & T.G. Martin. 2020. Conservation in heavily urbanized biodiverse regions requires urgent management action and attention to governance. *Conservation Science and Practice* 2020, e310 doi:10.1002/csp2.310

Ramey, T.L., C. Prescott & **J.S. Richardson**. 2020. Influence of moisture, nutrients, and distance from stream on early-stage mass loss of western red cedar leaf litter in headwater riparian forests. *Canadian Journal of Forest Research* 50: 1391–1398. doi.org/10.1139/cjfr-2020-0176

Tavernini, D.A. & **J.S. Richardson**. 2020. Effects of tributary size on the resource supply and physical habitat at tributary junctions along two mainstem rivers. *Canadian Journal of Fisheries and Aquatic Sciences* 77: 1393–1408. dx.doi.org/10.1139/cjfas-2019-0435

Rossetti de Paula, F., **J.S. Richardson**, A.C.Y. Yeung, S.J. Mitchell & D. Bahuguna. 2020. Decadal-scale changes in suspended wood after riparian recruitment in managed stands in headwater streams of coastal British Columbia, Canada. *Earth Surface Processes and Landforms* 45:1974-1989. doi: 10.1002/esp.4859

Cantonati, M., S. Poikane, C.M. Pringle, L.E. Stevens, E. Turak, J. Heino, **J.S. Richardson**, R. Bolpagni, A. Borrini, N. Cid, M. Čtvrtilíková, D.M.P. Galassi, M. Hájek, I. Hawes, Z. Levkov, L. Naselli-Flores, A.A. Saber, M. Di Cicco, B. Fiasca, P.B. Hamilton, J. Kubečka, S. Segadelli & P. Znachor. 2020. Characteristics, Main Impacts, and Stewardship of Natural and Artificial Freshwater Environments: Consequences for Biodiversity Conservation. *Water* 12, 260; doi:10.3390/w12010260

Yeung, A.C.Y., K. Stenroth & **J.S. Richardson**. 2019. Modelling biophysical controls on stream organic matter standing stocks under a range of forest harvesting impacts. *Limnologia* 78, 125714.

- Chará-Serna, A.M., L.B. Epele, C.A. Morrissey & J.S. Richardson. 2019. Nutrients and sediment modify the impacts of a neonicotinoid insecticide on freshwater community structure and ecosystem functioning. *Science of the Total Environment* 692:1291-1303.
- Yeung, A.C.Y., D.P. Kreuzweiser & J.S. Richardson. 2019. Stronger effects of litter origin on the processing of conifer than broadleaf leaves: a test of home-field advantage of stream litter breakdown. *Freshwater Biology* 64:1755-1768.
- Kielstra, B.W., J. Chau & J.S. Richardson. 2019. Measuring function and structure of urban headwater streams with citizen scientists. *EcoSphere* 10(4):e02720. 10.1002/ecs2.2720
- Richardson, J.S.** & E. Chauvet. 2019. Consumer responses to resource patch size and architecture: leaf packs in streams. *Fundamental and Applied Limnology* 192: 255–261.
- Richardson, J.S.** 2019. Biological diversity in headwater streams. *Water* 11, 366; doi:10.3390/w11020366
- Kuglerová, L., B.W. Kielstra, R.D. Moore & J.S. Richardson. 2019. Importance of scale, land-use, and stream network properties for riparian plant communities along an urban gradient. *Freshwater Biology* 64:587-600. DOI: 10.1111/fwb.13244
- Tiegs, S., D.M. Costello, M.W. Isken, G. Woodward, P.B. McIntyre, M.O. Gessner, E. Chauvet, N.A. Griffiths, A.S. Flecker, ... , **J.S. Richardson**, ... [150 authors] 2019. Global patterns and drivers of ecosystem functioning in rivers and riparian zones. *Science Advances* 5: eaav0486
- Ramey, T.L. & J.S. Richardson. 2018. Experimental effects of water, nutrients, and microclimate on leaf litter mass loss in headwater riparian forests. *Ecosphere* 9:e02478. 10.1002/ecs2.2478
- Marshall, J.C., V. Acuña, D.C. Allen, N. Bonada, A.J. Boulton, S.M. Carlson, C.N. Dahm, T. Datry, C. Leigh, P. Negus, **J.S. Richardson**, S. Sabater, R.J. Stevenson, A.L. Steward, R. Stubbington, K. Tockner & R. Vander Vorste. 2018. Protecting US river health by maintaining the legal status of their temporary waterways. *Science* 361:856-857.
- Elosegi, A., A. Nicolás & **J.S. Richardson.** 2018. Priming of leaf litter decomposition by algae seems of minor importance in natural streams during autumn. *PLoS ONE*
<https://doi.org/10.1371/journal.pone.0200180>
- Yeung, A.C.Y., J.L. Musetta-Lambert, D.P. Kreuzweiser, P.K. Sibley & J.S. Richardson. 2018. Relations of interannual differences in stream litter breakdown with discharge: bioassessment implications. *EcoSphere* 9 : e02423 DOI: 10.1002/ecs2.2423
- Yeung, A.C.Y. & J.S. Richardson. 2018. Expanding resilience comparisons to address management needs: A response to Ingrisch and Bahn. *Trends in Ecology and Evolution* 33:647-649.
- Naman, S., J.S. Rosenfeld, P.M. Kiffney & J.S. Richardson. 2018. The energetic consequences of habitat structure for forest stream salmonids. *Journal of Animal Ecology* 87:1383-1394. DOI: 10.1111/1365-2656.12845
- Chará-Serna, A.M. & J.S. Richardson. 2018. Chlorpyrifos interacts with other agricultural stressors to alter stream invertebrate community in laboratory microcosms. *Ecological Applications* 28:162–176.
- Kuglerová, L., E. Maher Hasselquist, J.S. Richardson, R.A. Sponseller, D.P. Kreuzweiser & H. Laudon. 2017. Management perspectives on *Aqua incognita*: connectivity and cumulative effects of small natural and artificial streams in boreal forests. *Hydrological Processes* 31:4238–4244.

- García, L., I. Pardo, W.F. Cross & **J.S. Richardson**. 2017. Moderate nutrient enrichment affects algal and detritus pathways differently in a temperate rainforest stream. *Aquatic Sciences* 79:941-952. doi: 10.1007/s00027-017-0543-2
- Ramey, T. & **J.S. Richardson**. 2017. Terrestrial invertebrates in the riparian zone: Mechanisms underlying their unique diversity. *BioScience* 67:808-819.
- García, L., W.F. Cross, I. Pardo & **J.S. Richardson**. 2017. Effects of land-use intensification on stream basal resources and invertebrate communities. *Freshwater Science* 36: 609-625.
- Kuglerová, L., L. García, I. Pardo, Y. Mottiar & **J.S. Richardson**. 2017. Does leaf litter from invasive plants contribute the same support of a stream ecosystem function as native vegetation? *Ecosphere* 8(4): e01779. 10.1002/ecs2.1779
- Naman, S.M., J.S. Rosenfeld, L.C. Third & **J.S. Richardson**. 2017. Habitat-specific production of aquatic and terrestrial invertebrate drift in small forest streams: implications for drift-feeding fish. *Canadian Journal of Fisheries and Aquatic Sciences* 74:1208-1217.
- Yeung, A.C.Y., A. Lecerf & **J.S. Richardson**. 2017. Assessing the long-term ecological effects of riparian management practices on headwater streams in a coastal temperate rainforest. *Forest Ecology and Management* 384:100-109.
- Naman, S.M., J.S. Rosenfeld, **J.S. Richardson** & J.L. Way. 2017. Species traits and channel architecture mediate flow disturbance impacts on invertebrate drift. *Freshwater Biology* 62:340-355.
- Louhi, P., T. Muotka & **J.S. Richardson**. 2017. Sediment addition reduces the importance of predation on ecosystem functions in experimental stream channels. *Canadian Journal of Fisheries and Aquatic Sciences* 74:32-40.
- Richardson, J.S.** & M.S. Wipfli. 2016. Getting quantitative about consequences of cross-ecosystem resource subsidies on recipient consumers. *Canadian Journal of Fisheries and Aquatic Sciences* 73:1609-1615.
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- Naman, S.M., J.S. Rosenfeld & **J.S. Richardson**. 2016. Causes and consequences of invertebrate drift in running waters: from individuals to populations and trophic fluxes. *Canadian Journal of Fisheries and Aquatic Sciences* 73:1292-1305.
- Xiang, H., Y. Zhang & **J.S. Richardson**. 2016. Importance of Riparian Zone: Effects of Resource Availability at Land-water Interface. *Riparian Ecology and Conservation* 3:1-17.
- Yeung, A.C.Y. & **J.S. Richardson**. 2016. Some conceptual and operational considerations when measuring 'resilience': a response to Hodgson *et al.* *Trends in Ecology and Evolution* 31:2-3.
- Atwood, T.B., E. Hammill, P. Kratina, H.S. Greig, J.B. Shurin & **J.S. Richardson**. 2015. Warming alters food web-driven changes in the CO₂ flux of experimental pond ecosystems. *Biology Letters* 11: 20150785. <http://dx.doi.org/10.1098/rsbl.2015.078>
- Majdi, N, W. Traunspurger, **J.S. Richardson** & A. Lecerf. 2015. Small stonefly predators affect micro- and meiobenthic communities in stream leaf packs. *Freshwater Biology* 60:1930-1943.

- Richardson, J.S.** & T. Sato. 2015. Resource flows across freshwater-terrestrial boundaries and influence on processes linking adjacent ecosystems. *Ecohydrology* 8:406-415.
- Minami, Y., M. Oba, S. Kojima & **J.S. Richardson**. 2015. Distribution pattern of coniferous seedlings after a partial harvest along a creek in a Pacific Northwest forest, Canada. *Journal of Forest Research* 20:328-336.
- Richardson, J.S.** & S. Béraud. 2014. Effects of riparian forest harvest on streams: a meta-analysis. *Journal of Applied Ecology* 51:1712-1721. DOI: 10.1111/1365-2664.12332
- Perkin, E.K., F. Hölker, K. Tockner & **J.S. Richardson**. 2014. Artificial light as a disturbance to light-naïve streams. *Freshwater Biology* 59:2235-2244.
- Avery-Gomm, S., J.S. Rosenfeld, **J.S. Richardson** & M. Pearson. 2014. Hydrological drought and the role of refugia in an endangered riffle-dwelling fish, Nooksack Dace (*Rhinichthys cataractae*). *Canadian Journal of Fisheries and Aquatic Sciences* 71:1625-1634.
- Atwood, T.B., E. Hammill & **J.S. Richardson**. 2014. Trophic-level dependent effects on CO₂ emissions from experimental stream ecosystems. *Global Change Biology* 20:3386-3396.
- Lovatt, C., J.S. Kominoski, T. Sakamaki, B. Macleod & **J.S. Richardson**. 2014. Leaf-litter leachate and light interactively enhance accrual of stream biofilms. *Fundamental & Applied Limnology* 184:297-306.
- Branton, M.A. & **J.S. Richardson**. 2014. A test of the umbrella species approach in restored floodplain ponds. *Journal of Applied Ecology* 51:776-785.
- Stenroth, K., T.M. Hoover, J. Herrmann, I. Bohman & **J.S. Richardson**. 2014. A model-based comparison of organic matter dynamics in between riparian-forested and open-canopy streams. *Riparian Ecology and Conservation* 2:1-13.
- Atwood, T.B., E. Hammill, D.S. Srivastava & **J.S. Richardson**. 2014. Competitive displacement alters top-down effects on carbon dioxide saturation in a freshwater ecosystem. *Oecologia* 175:353-361.
- Lapointe N.W.R., S.J. Cooke, J.G. Imhof, D. Boisclair, J.M. Casselman, R.A. Curry, O.E. Langer, R.L. McLaughlin, C.K. Minns, J.R. Post, M. Power, J.B. Rasmussen, J.D. Reynolds, **J.S. Richardson**, W.M. Tonn. 2014. Principles for ensuring healthy and productive freshwater ecosystems that support sustainable fisheries. *Environmental Reviews* 22:110-134. 10.1139/er-2013-0038
- García, L., I. Pardo & **J.S. Richardson**. 2014. A cross-continental comparison of stream invertebrate community assembly to assess convergence in forested headwater streams. *Aquatic Sciences* 76:29-40.
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4. PATENTS

5. SPECIAL COPYRIGHTS

6. ARTISTIC WORKS, PERFORMANCES, DESIGNS

7. OTHER WORKS

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Book Review: Williams, D.D. 2006. The Biology of Temporary Waters, Oxford Press. *Quarterly Review of Biology* 82:167-168.

Branchlines (Faculty of Forestry Newsletter) – September 1996; December 2000; March 2002; March 2004; March 2013

Website: Stream and Riparian Research Laboratory. <http://richardson.forestry.ubc.ca/>
- this is a site I maintain for my research group.

8. **WORK SUBMITTED** (including publisher and date of submission)

Atwood, T.B., M. Kang, J.S. Kominoski & J.S. Richardson. Are fractionation 'constants' constant? The influence of coniferous versus deciduous plant litter on isotopic fractionation of C and N in a common stream detritivore. *In revision for another journal*

Tavernini, D.A. & **J.S. Richardson.** Tributary junction, what's your function? Testing patch-scale mechanisms of invertebrate community assembly responses at confluences. *Freshwater Science* in review

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Kominoski, J.S., S.K. Chapman, W.K. Dodds, J.J. Follstad Shah & **J.S. Richardson.** Understanding the causes and consequences of global changes in riparian vegetation throughout inland and coastal waters. In: Swan, C., L. Boyero, C. Canhoto (Eds.). *Leaf Litter Breakdown in Freshwater Ecosystems*. Springer in review

9. **WORK IN PROGRESS** (including degree of completion)

Manuscripts

Mallik, A.U., R.D. Moore, & **J.S. Richardson.** Periodic droughts followed by wet periods enhance vegetative regeneration of step-moss (*Hylocomium splendens*): Experimental evidence from riparian buffers of varying widths and stem density along 15 temperate forest streams

Silverthorn, T.K. & **J.S. Richardson.** Forest management impacts on greenhouse gas fluxes from riparian soils along headwater streams.

Many others

Studies in progress

Ecology and management of riparian-stream ecosystems: a large scale experiment using alternative streamside management techniques.

This is an integrated, multidisciplinary program with 6 principal investigators and our students, lead by myself. This program tests the effectiveness of riparian management practices using an ecosystem approach. My portion of this multi-year study includes measures of stream invertebrate communities, terrestrial invertebrate communities (in particular carabid beetles), amphibians, small mammals, organic matter dynamics, and ecosystems modelling. This is a replicated, before-after control-impact (BACI) experiment requiring many years.

Studies of the ecology of small streams.

Small streams form a convenient model system for the exploration of processes across many scales in space and time. I use experimental and descriptive methods for testing hypotheses about the key variables that structure and control processes within these stream systems, and including connections with adjacent ecosystems (riparian areas and downstream). These systems are largely detrital-based, donor-controlled systems, which have interesting properties as systems. They are also of a convenient scale that we can modulate driving variables experimentally from small chambers within streams, to entire catchments. An example of the latter is the riparian management experiment noted above. We also have plans in the long term to use both long-term data series, and experimental manipulations to look at the consequences of temporal variation in forcing functions, including climate variation.

Restoration ecology of small streams.

These studies evaluate the ecosystem-level effects of instream placements on organic matter dynamics and macroinvertebrate diversity and productivity. We are also investigating the effects of riparian vegetation management (composition) for stream communities. There are two papers published (Negishi), and a thesis (Kolodziejczyk).

Ecology of threatened and endangered species, and the effects of forest practices.

Several of our studies are devoted to understanding the demography and population dynamics of amphibians, as well as the mechanisms affecting those properties. Long-term, mark-recapture (Coastal giant salamanders; whole amphibian communities) or quantitative sampling (tailed frogs) are being used to contrast demographics of populations in harvested versus control areas, or in a before-after control-impact contrast experiment. The studies of Coastal giant salamanders and tailed frogs are nearly complete. The long-term mark-recapture of amphibians as part of the riparian management experiment is ongoing.