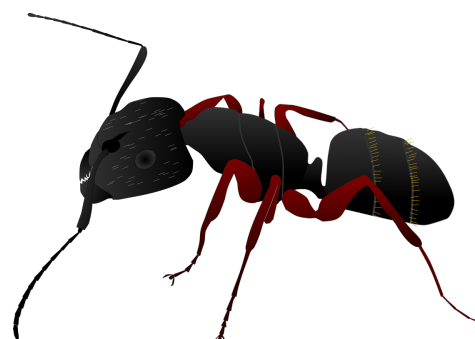


# Asim R. Renyard <sup>BSc</sup>

## Curriculum vitae

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11 Feb 2021



## Education

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### PhD Candidate, Biological Sciences

(Jan 2017 – Present)

Simon Fraser University, Burnaby, B.C.

Thesis: Foraging and communication ecology of the carpenter Ant, *Camponotus modoc*.

### BSc, Biological Sciences Honours

(Sept 2011-Apr 2016)

Simon Fraser University, Burnaby B.C.

Honors thesis: Dominant negative DRP1 rescues mitochondrial length in constitutively active GSK3 $\beta$  transfected primary cortical astrocytes

### Fall Program in Marine Science

(Sept 2015 – Dec 2015)

Bamfield Marine Sciences Center, Bamfield, B.C.

Directed studies project: Native and invasive crab chemical cues may cause divergent growth responses in the Pacific oyster, *Crassostrea gigas*. Attained skills in ecological fieldwork, laboratory work, experimental design, statistical analysis, scientific writing, R coding and presentations during research-oriented coursework.

### Summer Program in Marine Science

(May 2015 – Aug 2015)

Bamfield Marine Sciences Center, Bamfield, B.C.

Coursework in marine ecology and crustacean biology. Developed marine research field skills such as: boating, quadrat sampling and biodiversity surveying.

## Publications

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(\*Denotes undergraduate students mentored in research projects)

### Peer-reviewed publications

5. Hoefele D, Chalissery J\*, **Renyard A**, & Gries G (*In press*) Experimentally-guided development of a food bait for European fire ants. *Entomologia Experimentalis et Applicata* EEA-2020-0032

4. **Renyard A**, Gries R, & Gries, G (2020) A blend of formic acid, benzoic acid and aliphatic alkanes mediates alarm recruitment responses in western carpenter ants, *Camponotus modoc*. *Entomologia Experimentalis et Applicata*. 168: 311–321. (Cover story) <https://doi.org/10.1111/eea.12901>
3. **Renyard A**, Alamsetti S, Gries R, Munoz A\*, & Gries, G (2019) Identification of the trail pheromone of the carpenter ant, *Camponotus modoc*. *Journal of Chemical Ecology*. 45(11), 901-913. <https://doi.org/10.1007/s10886-019-01114-z>
2. Chalissey J\*, **Renyard A**, Gries R, Hoefele D, Alamsetti S, & Gries G (2019) Ants sense, and behaviorally respond to, trail pheromones of ant community members. *Insects*, 10(11), 383. (Cover story) <https://doi.org/10.3390/insects10110383>
1. Brodie B, **Renyard A** (co-lead author), Gries R, Zhai H, Avery J, Ogilvie S, & Gries G (2018) Identification and field testing of floral odorants that attract the rove beetle *Pelecomalium testaceum* (Mannerheim) to skunk cabbage, *Lysichiton americanum* (L.). *Arthropod-Plant Interactions*. 12(4), 591–599. <https://doi.org/10.1007/s11829-018-9607-z>

#### Journal articles in review or submitted

1. **Renyard A**, Gries R, Lee J\*, Chalissey J, Damin S\*, Britton R, & Gries G (*Submitted*) All sugars ain't sweet – selection of particular mono-, di- and trisaccharides by Western carpenter ants and European fire ants.

## Research and Work Experience

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### Graduate Research Assistant

(Jan 2017 – current)

Gries Lab, Simon Fraser University

- Research on the foraging cues, preferences and patterns as well as the alarm and foraging communication signals of western carpenter ants (*Camponotus modoc*).
- Designed and conducted numerous laboratory olfactometer experiments for attraction of ants to pheromone and food-derived semiochemicals, trail following experiments and group foraging bioassays. Analyzed and created graphics of data using R. Prepared manuscripts for publication.

### Research Assistant

(April 2019)

Supervisor: Dr. Sean McCann, Vancouver International Airport

- Assisted with earthworm and Tipulidae larvae sampling on grass fields adjacent to main runways.

**Research Assistant**

(May 2016 - Oct 2016)

Gries lab, Simon Fraser University

- Upstarted a new research program on the foraging and communication ecology of the carpenter ant *Camponotus modoc*.
- Established laboratory colonies and rearing methods. Designed and conducted laboratory Y-tube olfactometer experiments to assess attraction to pheromones in *C. modoc*. Analyzed and created graphics of data using R.

**Research Assistant**

(May 2015 - Aug 2015)

Gries lab, Simon Fraser University

- Designed and conducted field trapping experiments on pollination ecology of the western skunk cabbage (*Lysichiton americanus*) by the beetle *Pelecomalium testaceum*.
- Assisted with analysis of field data and manuscript write up.

**Honours Thesis**

(Jan 2015 – Apr 2015)

Rintoul Lab, Simon Fraser University

- Examined changes in mitochondrial morphology using live cell fluorescence imaging microscopy.
- Designed and conducted laboratory experiments, analysed and graphed data, interpreted results, wrote final thesis and presented findings to examining committee.
- Prepared growth media for bacterial and mammalian cells, extracted plasmid constructs from *E. coli*, performed lipid mediated transfections, sterile astrocyte cell culture, nanodrop spectrophotometry, fluorescence microscopy.

**Research Assistant**

(May 2013 – Aug 2013)

Center for Wildlife Ecology, Simon Fraser University

- Helped maintain a colony of shore birds (*Philomachus pugnax*) during the summer breeding season.
- Assisted with bird catching, banding and measuring of both adult birds and fragile chicks. Worked independently to clean and provide food in aviaries.

**BMSC Ambassador**

(Sept 2014 - April 2015)

Simon Fraser University

- Promoted undergraduate courses at the Bamfield Marine Sciences Center.
- Presented to numerous biology classes, led information sessions and independently met with students to provide information about BMSC.

## Scholarships and Awards

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2020	31.	<b>1<sup>st</sup> place, 12-minute presentation competition (International)</b> , for the oral presentation: To the beat of their own drum I The role of vibratory communication in Western Carpenter Ants. Entomological Society of America Annual Meeting	\$75 USD
	30.	<b>2<sup>nd</sup> place, 12-minute presentation competition (Regional)</b> , for the oral presentation: To the beat of their own drum I The role of vibratory communication in Western Carpenter Ants. Entomological Society of British Columbia Annual Meeting	\$400
	29.	<b>Alexander Graham Bell Canada Graduate Scholarship - Doctoral (CGS D)</b> , NSERC	\$105 000
	28.	<b>3<sup>rd</sup> place, 12-minute presentation competition (Regional)</b> , for the oral presentation: Bring home the bacon: Macro and micronutrient foraging preferences in the carpenter ant, <i>Camponotus modoc</i> . Pacific Ecology and Evolution Conference Annual Meeting.	Non-monetary
	27.	<b>Graduate Fellowship</b> , Department of Biological Sciences, Simon Fraser University	\$6500
2019	26.	<b>Excellence in Teaching Award</b> , Department of Biological Sciences, Simon Fraser University	\$100
	25.	<b>Excellence in Teaching Award</b> , Faculty of Science, Simon Fraser University	\$500
	24.	<b>Alexander Graham Bell Canadian Graduate Scholarship - Master's</b> , NSERC	\$17 500
2018	23.	<b>2<sup>nd</sup> place President's Prize Student Competition (International)</b> , for the oral presentation "Chemical distress cry for help: Alarm communication in the western carpenter ant, <i>Camponotus modoc</i> ", ESA, ESC and ESBC Joint Annual Meeting	\$70
	22.	<b>Postgraduate Scholarship</b> , Entomological Society of Canada	\$2000
	21.	<b>Graduate Fellowship</b> , Department of Biological Sciences, Simon Fraser University	\$6500
	20.	<b>Best Student Presentation (Regional)</b> , "Identification and testing of the trail pheromone in the carpenter ant <i>Camponotus modoc</i> ", Professional pest management association of BC annual meeting	\$100
	19.	<b>Travel and Minor Research Award</b> , Simon Fraser University	\$400
2017	18.	<b>1<sup>st</sup> place President's Prize Student Competition (National)</b> , for the oral presentation "Identification and testing of the trail pheromone in the carpenter ant <i>Camponotus modoc</i> ", Entomological Society of Canada Annual General Meeting	\$150

	17.	<b>MPM Graduate Entrance Scholarship</b> , Department of Biological Sciences, Simon Fraser University	\$1200
	16.	<b>Graduate Fellowship</b> , Department of Biological Sciences, Simon Fraser University	\$6500
	15.	<b>Thelma Finlayson Graduate Entrance Scholarship</b> , Department of Biological Sciences, Simon Fraser University	\$6000
2016	14.	<b>Excellence in Undergraduate Research Award</b> , Department of Biological Sciences, Simon Fraser University	\$750
	13.	<b>Undergraduate Open Scholarship</b> , Simon Fraser University	\$270
2015	12.	<b>Fall Program Scholarship</b> , Bamfield Marine Sciences Center	\$1000
	11.	<b>Undergraduate Open Scholarship</b> , Simon Fraser University	\$1650
	10.	<b>Undergraduate Open Scholarship</b> , Simon Fraser University	\$1500
	9.	<b>Dean's Honour Roll</b> (spring), Faculty of Science, Simon Fraser University	
	8.	<b>Dean's Honour Roll</b> (fall), Faculty of Science, Simon Fraser University	
	7.	<b>President's Honour Roll</b> (spring), Simon Fraser University	
	6.	<b>President's Honour Roll</b> (fall), Simon Fraser University	
	5.	<b>Undergraduate Student Research Award</b> , NSERC	\$4500
2014	4.	<b>The Shaughn and Sharon Clements Biological Sciences Field Trip Award</b> , Simon Fraser University	\$700
	3.	<b>Dean's Honour Roll</b> (fall), Faculty of Science, Simon Fraser University	
	2.	<b>President's Honour Roll</b> (fall), Simon Fraser University	
2013	1.	<b>Dean's Honour Roll</b> (fall), Faculty of Science	

Total funding received: \$163 365

## Presentations

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(\*Denotes undergraduate students mentored in research projects)

### Invited presentations

3. **Renyard A**, Cooper S, Gooding C, Munoz A, Gries R, Alamsetti S, & Gries G (Oral) Unravelling the signs and signals used in the daily lives of Carpenter ants. Raincoast Education Society Charismatic Microfauna Seminar Series. Ucluelet BC, Jan 22, 2020

2. **Renyard A**, Cooper S, Gooding C, Munoz A, Gries R, Alamsetti S, & Gries G (Oral) Unravelling the signs and signals used in the daily lives of Carpenter ants. Raincoast Education Society Charismatic Microfauna Seminar Series. Tofino BC, Jan 23, 2020.
1. **Renyard A**, Cooper S, Gooding C, Munoz A, Gries R, & Gries G (Oral) Carpenter ant pest control: New horizons for poison food bait control tactics. Structural Pest Management Association of BC Meeting. Burnaby BC, Nov 20, 2019.

### International presentations

2. **Renyard A** & Gries G (Oral) To the beat of their own drum: The role of vibratory communication in Western Carpenter Ants. Entomological Society of America Annual Meeting. Virtual, Nov 11-30, 2020.
1. **Renyard A**, Gries R, & Gries G (Oral) Chemical distress cry for help: Alarm communication in the western carpenter ant, *Camponotus modoc*. ESA, ESC and ESBC Joint Annual Meeting. Vancouver BC, Nov 11-14, 2018.

### National and Regional presentations

9. **Renyard A** & Gries G (Oral) To the beat of their own drum: The role of vibratory communication in Western Carpenter Ants. Entomological Society of BC Annual Meeting. Virtual, Oct 26-28, 2020.
8. **Renyard A**, Gooding C, Gries R, & Gries G (Oral) Bring home the bacon: Macro and micronutrient foraging preferences in the carpenter ant, *Camponotus modoc*. Pacific Ecology and Evolution Conference Annual Meeting. Bamfield BC, Feb 21-23, 2020.
7. **Renyard A**, Gries R, & Gries G (Oral) Formic acid, benzoic acid and aliphatic alkanes mediate alarm-recruitment responses in the western carpenter ant, *Camponotus modoc*. Pacific Ecology and Evolution Conference Annual Meeting. Bamfield BC, Feb 22-24, 2019.
6. **Renyard A**, Munoz A\*, Gries R, Kumar S, & Gries G (Oral) Identification and testing of the trail pheromone in the carpenter ant *Camponotus modoc*. Annual General Meeting and Symposium of the Professional Pest Management Association of BC. Burnaby BC, Mar 5, 2018.
5. **Renyard A**, Munoz A\*, Gries R, Kumar S, & Gries G (Oral) Identification and testing of the trail pheromone in the carpenter ant *Camponotus modoc*. Pacific Ecology and Evolution Conference Annual Meeting. Bamfield BC, Feb 23-25, 2018.

4. **Renyard A**, Munoz A\*, Gries R, Kumar S, & Gries G (Oral) Identification and testing of the trail pheromone in the carpenter ant *Camponotus modoc*. Ecology and Evolution Retreat. Squamish BC, Nov 3-5, 2017.
3. **Renyard A**, Munoz A\*, Gries R, Kumar S, & Gries G (Oral) Identification and testing of the trail pheromone in the carpenter ant *Camponotus modoc*. Annual General Meeting of the Entomological Society of Canada. Winnipeg MB, Oct 21-25, 2017.
2. **Renyard A**, Gries R, & Gries G (Oral) Identification and testing of the poison gland pheromone in the carpenter ant *Camponotus modoc*. Annual General Meeting and Symposium of the Professional Pest Management Association of BC. Burnaby BC, Feb 28, 2017.
1. **Renyard A**, Gries R, & Gries G (Oral) Identification and testing of the poison gland pheromone in the carpenter ant *Camponotus modoc*. Pacific Ecology and Evolution Conference Annual Meeting. Bamfield BC, Feb 24-26, 2017.

#### **Presentations given by undergraduate mentees**

9. Gooding C (presenter)\*, Cooper S, Alamsetti S, **Renyard A**, Gries R, & Gries G (Oral) Western carpenter ants, *Camponotus modoc*, are attracted to floral odorants. Entomological Society of America Annual Meeting. Virtual, Nov 11-30, 2020
8. Gooding C (presenter)\*, Cooper S, Alamsetti S, **Renyard A**, Gries R, & Gries G (Oral) Western carpenter ants, *Camponotus modoc*, are attracted to floral odorants. Entomological Society of BC Annual Meeting. Virtual, Oct 26-28, 2020
7. Gooding C (presenter)\*, **Renyard A**, Gries R, & Gries G (Oral) The macro- and micro-nutrient composition of food baits affects foraging decision by western carpenter ants, *Camponotus modoc*. Annual General Meeting of the Entomological Society of BC. Victoria BC Oct 4-5, 2019
6. Cooper S (presenter)\*, **Renyard A**, Gooding C, Gries R, & Gries G (Oral) Do western carpenter ants, *Camponotus modoc*, locate food sources via food odourants? Annual General Meeting of the Entomological Society of BC. Victoria BC Oct 4-5, 2019
5. **Renyard A**, Munoz A (presenter)\*, Gries R, Kumar S, & Gries G (Invited poster) Identification and testing of the trail pheromone of the western carpenter ant (WCA) *Camponotus modoc*: Implications for WCA management. ESA, ESC and ESBC Joint Annual Meeting. Vancouver BC, Nov 11-14, 2018.

4. Lee J (presenter)\*, **Renyard A**, Gries R, & Gries G (Oral) Sweet choices: Honeydew sugar preferences in the western carpenter ant, *Camponotus modoc*. ESA, ESC and ESBC Joint Annual Meeting. Vancouver BC, Nov 11-14, 2018.
3. Munoz A (presenter)\*, **Renyard A**, Gries R, Kumar S, & Gries G (Oral) Attraction of the western carpenter ant, *Camponotus modoc*, to aphid honeydew odorants. ESA, ESC and ESBC Joint Annual Meeting. Vancouver BC, Nov 11-14, 2018.
2. Chalissey J (presenter)\*, Hoefele D, **Renyard A**, Gries R, & Gries G (Oral) Do multiple species of ants sense and behaviorally respond to each other's trail pheromones? ESA, ESC and ESBC Joint Annual Meeting. Vancouver BC, Nov 11-14, 2018.
1. Chalissey J (presenter)\*, Hoefele D, **Renyard A**, & Gries G (Oral) Development of a food bait for European Fire Ants. Annual General Meeting of the Entomological Society of Canada. Winnipeg MB, Oct. 21-25, 2017.

## Teaching and Mentoring

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### Guest Lecturer

(Fall 2019)

BISC 317: Insect Biology, Simon Fraser University

- Instructed a 50-minute third-year insect biology lecture on insect mechanoreception

### Teaching Assistant

(Fall 2017, 2018, 2019)

BISC 317: Insect Biology, Simon Fraser University

- Co-instructed a third-year insect biology laboratory of up to 24 students. Instructed students in insect anatomy and identification, answered student's questions and evaluated student's exams and assignments.

### Research Mentor

(Summer 2018 - 2020)

USRA (NSERC, VPR) Research Assistants, Simon Fraser University

- Mentored 5 full-time undergraduate research assistants. Instructed students in insect rearing, experimental design, data analysis, graphical design, presentation skills and scientific writing.

### Research Mentor

(Spring 2017 - Spring 2018)

BISC 498: Undergraduate Research, Simon Fraser University

- Mentored 3 students during a one semester long directed study. Instructed students in experimental design, data analysis and scientific writing.

**Research Mentor**

(Fall 2016 - Summer 2019)

Undergraduate Volunteers, Simon Fraser University

- Mentored 8 students during a one semester long volunteer position. Instructed students in maintenance of laboratory insect colonies (carpenter ants, European fire ants and meal worms).

**Research Mentor**

(Summer 2017)

High School Volunteers, Simon Fraser University

- Part time mentorship of students during a one semester long volunteer position. Instructed students in maintenance of laboratory insect colonies (carpenter ants, European fire ants and meal worms).

## Community Engagement

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**Professional Service****Equity, Diversity and Inclusion (EDI) Committee Co-chair**

(Apr 2020 – current)

Entomological Society of BC

- Alongside fellow co-chair, Dr. Chandra Moffat, formed the inaugural EDI committee for the Entomological society of BC. Scheduled meetings, organized working groups within the society to promote an equitable, inclusive and just society for our members. Working towards education initiatives for our members as well as funding and strategies to include historically marginalized groups within the society and science in general.

**Member at large**

(Apr 2020 – current)

Biology Graduate Caucus, Simon Fraser University

- Served as the member at large for the biology graduate caucus. Participated in caucus meeting, helped in initiatives to promote graduate student affairs within the biology department.

**Graduate Student Director**

(Sept 2019 – current)

Entomological Society of BC

- Served as the voice of student affairs on the ESBC executive committee, assisted with conference organization, generated digital content/artwork for communications to the society's membership, organized contests for members, ordered T-shirts for the society's sale, participated in the ESBC executive discussions and decisions, and communicated the society's activities to student members.

**Outreach Committee Member**

(Sept 2019 – current)

## Entomological Society of BC

- Served on the inaugural outreach committee for the ESBC. Helped create new outreach activities and programs.

## Finance Chair

(Feb 2019 – current)

### Pacific Ecology and Evolution Conference (PEEC)

- Served as finance chair for the organizational committee for the 41<sup>st</sup> annual PEEC. Managed \$37,664.00 of funds, prepared budgets, acquired estimates and processed payments for expenses.

## Event Organizer

(Apr 2018 – Apr 2020)

### Biology Graduate Caucus, Simon Fraser University

- Co-organized social events for SFU biology graduate students including the new student welcome BBQ and Halloween party.

## Symposium Organizer

(May 2019)

### Biology graduate caucus, Simon Fraser University

- Co-organized the poster sessions, oral presentations and post symposium mixer for the SFU Biology research showcase, an event aimed at boosting connectivity within the department of biological sciences.

## Teaching and Support Staff Union (TSSU) Steward

(Apr 2018 - Apr 2019)

### Biology graduate caucus, Simon Fraser University

- Liaison between teaching assistants in the department of biological sciences and the TSSU. Provided updates to colleagues regarding grievances and referred members to appropriate services for help.

## Volunteering

### Volunteer

(May 2017 - current)

### Lookout Emergency Aid Society, New Westminster

- Assisted with care of residents in a low-income housing shelter. Cooked meals helped clean common areas and participated in activities with residents (playing cards etc).

## Outreach Facilitator

(June 2019)

### Pollinator days, Van Dusen botanical garden, Vancouver

- Assisted with running an interactive game tent aimed at educating school age children on pollinators.

## Volunteer

(Feb 2014 - Apr 2014)

### Williams Lab, Simon Fraser University

- Extracted data from published figures to contribute data to hormonebase

### **Volunteer**

(April 2014)

Canadian Cancer Society, British Columbia and Yukon

- Collected pledges for the Canadian Cancer Society. Raised a total of 481.00\$.

### **Marine Conservation Internship**

(Nov 2016)

Big Blue Diving Center, Koh Tao, Thailand

- A scuba diving internship focused on marine conservation. Participated in beach and underwater clean ups. Promoted coral reef conservation and eco-friendly diving on Koh Tao. Assisted with nursery coral reef maintenance, construction and observation, mooring line maintenance and coral reef biodiversity surveys.

## **Membership**

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Student member - Entomological Society of America (2018-present)

Student member - Entomological Society of British Columbia (2018-present)

Student member - Entomological Society of Canada (2017-Present)

Events committee - SFU Biology Graduate Student Caucus (2018-present)

TSSU Representative - SFU Biology Graduate Student Caucus (2017-2018)

## **Certifications**

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- WHMIS
- Avalanche Skills Training (Level 1)
- Non-Restricted Firearms Licence
- Driver's License (Class 5)
- Pleasure Craft Operators Card (Boating)
- SCUBA
  - SSI Open Water Diver (18m)
  - SSI Advanced Adventurer (30m)
  - SSI Deep Diving (40m)
  - SSI Nitrox (up to EAN40)
  - SSI Shark Ecology
  - PADI Dry Suit