

**CELIA C. SYMONS**

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**PROFESSIONAL APPOINTMENTS**

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Postdoctoral Fellow, University of California Santa Cruz 2017-current  
 University of California, President's Postdoctoral Fellow

**EDUCATION**

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Ph.D. Biology: Ecology, Behavior and Evolution Section 2012-2017  
 University of California San Diego, Supervised by Dr. Jonathan Shurin  
 Thesis title: *The ecology and evolution of top-down and bottom-up control in mountain lakes*

M.Sc. Biology: Department of Biology 2010-2012  
 Queen's University, Supervised by Dr. Shelley Arnott  
 Thesis title: *Windows of opportunity: the timing of dispersal events influences zooplankton community response to environmental change in Subarctic ponds*

B.Sc. Hons: Major: Biology, Minor: Mathematics 2006-2010  
 Queen's University, Supervised by Dr. Shelley Arnott  
 Thesis title: *Nutrient limitation of phytoplankton communities in Subarctic lakes and ponds in Wapusk National Park, Canada*

**REFEREED PUBLICATIONS**

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- [9] **Symons, C.C.**, Schulhof, M.A., Cavalheri, H.B., and Shurin, J.B. Antagonistic effects of temperature and allochthony on fish growth in California mountain lakes. *Accepted at Oecologia*
- [8] Filbee-Dexter, K.\*, **Symons, C.C.\***, Jones, K., Haig, H., Pittman, J., Alexander, S., Burke, M. Management capacity in the face of ecological surprise. *Journal of Applied Ecology* 00: 1-12. \*Authors contributed equally to this work
- [7] Filbee-Dexter, K., Pittman J., Haig, H.A., Alexander S.M., **Symons C.C.**, and Burke, M.J. Ecological surprise: concept, synthesis, and social dimensions. *Ecosphere* 8:e02005.
- [6] **Symons, C.C.** and Shurin, J.B. 2016. Climate constrains lake community and ecosystem responses to introduced predators. *Proceedings of the Royal Society B: Biological Sciences* 283:20160825. *Winner of the Exceptional Promise in Graduate Research Award from the Aquatic Section of the Ecological Society of America.*
- [5] **Symons, C.C.** and Arnott, S.E. 2014. Timing is everything: priority effects alter post-disturbance invasibility. *Ecology and Evolution* 4: 397-407.

- [4] **Symons, C.C.**, Pedruski, M., Sweetman, J.N. and Arnott S.E. 2014. Spatial, abiotic and biotic determinants of zooplankton community composition in Subarctic tundra ponds in Wapusk National Park, Canada. *Arctic, Antarctic and Alpine Research* 46: 159-190.
- [3] **Symons, C.C.** and Arnott, S.E. 2013. Regional zooplankton dispersal provides spatial insurance for ecosystem function. *Global Change Biology* 19: 1610–1619.
- [2] **Symons, C.C.**, Arnott, S.E. and Sweetman, J.N. 2012. Grazing rates of crustacean zooplankton communities on intact phytoplankton communities in Canadian Subarctic lakes. *Hydrobiologia* 694: 131-141.
- [1] **Symons, C.C.**, Arnott, S.E. and Sweetman, J.N. 2012. Nutrient limitation of phytoplankton communities in Subarctic lakes and ponds in Wapusk National Park, Canada. *Polar Biology* 35: 481-489.

*In review or revision (manuscripts available upon request)*

**Symons, C.C.**, Schulhof, M.A., Cavalheri, H.B., and Shurin, J.B. Gone but not forgotten: Non transitive effects of fish addition and removal on mountain lake plankton communities. *In revision*

Schulhof, M., Allen, A., Allen, E., Mladenov, N., McCrow, J., **Symons, C.C.**, Cavalheri, H., Blanton, J., Jones, N., and Shurin, J. Microbial communities are independently controlled by nutrients, detritus and biotic interaction in mountain lakes. *In revision*

Cavalheri, H.B., **Symons, C.C.**, Schulhof, M.A., Jones, N.T., and Shurin, J.B. Fast and slow evolutionary response of *Daphnia* to temperature and predators in mountain lakes. *In revision for Oikos*

Jones, N., Cavalheri, H.\*, **Symons, C.C.\***, Pedroza, A., and Shurin, J.B. Climate change and predator driven community reorganization. *In review at Ecology*. \*authors contributed equally and are listed alphabetically.

Wallen, K.; Filbee-Dexter, K.; Pittman, J.; Posner, S.; Alexander, S.; Rolulo, C.; Bennett, D.; Clark, E.; Cousins, S.; Dubik, B.; Garcia, M.; Haig, H.; Koebele, E.; Qiu, J.; Richards, R.; **Symons, C.C.** and Zipper, S. Furthering perspectives on doctoral training in interdisciplinary team science and socio-environmental research. *In review at PLOS ONE*

Harrower, W., Gonzalez, A., Martone, R., **Symons, C.C.**, and O'Connor, M. Trophic cascades in a time of global environmental change. *In revision*

## RESEARCH GRANTS

Name of Award	Value (\$)	Period Held
Sequoia Science Learning Center Grant (Co-applicant)	5,000	2018
ISEECI Research Grant	2,460	2018
McElroy Award – research funding portion	1,000	2016-2017
Interdisciplinary Collaboratories Award (Co-applicant)	36,927	2016-2017
SESYNC Graduate Pursuit (Co-applicant)	35,000	2014-2016

<b>Name of Award</b>	<b>Value (\$)</b>	<b>Period Held</b>
Valentine Ecological Reserve Graduate Student Grant	1,000	2013
	1,700	2014
	1,000	2015
White Mountain Research Grant	700	2014
Jeanne Marie Messier Memorial Fund Grant	1,180	2013
Mildred E. Mathias Graduate Student Research Grant	2,410	2013
Northern Scientific Training Program	2,000	2009
	2,200	2010
	2,615	2011
Northern Research Fund Award	1,000	2011

### **FELLOWSHIPS & AWARDS**

<b>Name of Award</b>	<b>Value (\$)</b>	<b>Period Held</b>
University of California President's Postdoctoral Fellowship	106,432	2017-2019
ESA Aquatic Ecology Section Exceptional Promise in Graduate Research Award	400	2017
Institute for the Study of Ecological and Evolutionary Climate Impacts Travel Grant	465	2017
McElroy Award	1,000	2016-2017
Frontiers of Innovation Scholars Program (FISP)	25,000	2016-2017
SESYNC Fellow	2,000	2014-2016
Institute for the Study of Ecological and Evolutionary Climate Impacts Graduate Fellowships	7,927	2016
NSERC Post-Graduate Scholarship –D3	63,000	2013-2016
ASLO travel award	500	2014
Ruth Stern Graduate Fellowship	2,500	2012-2013
Ontario Graduate Scholarship (Declined)	30,000	2012 & 2011
NSERC Alexander Graham Bell Canadian Graduate Scholarship - M	17,500	2011-2012
The W. Garfield Weston Award for Northern Research	15,000	2011-2012
Queen's University Graduate Award	7,425	2010-2011
Queen's University Travel Award	200	2011
Travel Award, Society of Canadian Limnologists	335	2010, 2011
NSERC Undergraduate Student Research Award	4,500	2010-2010

**CONFERENCE PRESENTATIONS (\*presenter) only first author presentations listed**

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- Symons, C.C.\***, Fryxell, D. and Palkovacs, E.P. Ecological feedback of Daphnia thermal adaptation on zooplankton community and ecosystem properties, Gordon Conference: Integrating Across Scales, Biddeford, Maine, 2018.
- Symons, C.C.\***, Filbee-Dexter, K., Jones, K., Haig, H., Pittman, J., Alexander, S.M., Burke, M. Quantifying the socio-ecological dynamics of ecological surprise in aquatic ecosystems reveals mismatch between management and ecological processes. Association for the Sciences of Limnology and Oceanography, Victoria, 2018.
- Symons, C.C.\***, Fryxell, D. and Palkovacs, E.P. Temperature and predators interactively effect prey traits. Postdoctoral symposium, Santa Cruz, 2018. *Winner of best poster.*
- Symons, C.C.\***, Schulhof, M.A., Cavalheri, H.B. and Shurin, J.B. Gone but not forgotten: Non transitive effects of fish addition and removal on mountain lake plankton communities. Ecological Society of America, Portland, 2017.
- Symons, C.C.\***, Semmens B. and Shurin, J.B. The influence of climate and drought on fish in California mountain lakes. UC San Diego Frontier of Scholarship Program, San Diego, 2016.
- Symons, C.C.\***, and Shurin, J.B. History affects the response of mountain lake plankton communities to combined effects of climate and predation. Association for the Sciences of Limnology and Oceanography, Santa Fe, 2016.
- Haig, H. A. \*, **Symons, C.C.\***, Pittman, J., Alexander, S., Bass, M. Burke, M., Filbee-Dexter, K. 2016. What drives surprise in socio-ecological systems? Association for the Sciences of Limnology and Oceanography, Santa Fe, 2016.
- Symons, C.C.\***, and Shurin, J.B. Climate constrains lake community and ecosystem response to introduced predators. Western Society of Naturalists, Sacramento, 2015.
- Symons, C.C.\***, and Shurin, J.B. Ecological responses to predators and temperature in California mountain lakes. *Invited symposium talk* at the Ecological Society of America, Sacramento, 2014.
- Symons, C.C.\***, and Shurin, J.B. Temperature alters trophic cascades in California mountain lakes. Association for the Sciences of Limnology and Oceanography, Portland, 2014.
- Symons, C.C.\***, and Shurin, J.B. Temperature alters trophic cascades in California mountain lakes. Mathias Symposium, Bodega Bay, 2014.
- Symons, C.C.\***, and Arnott S.E. Timing is everything: priority effects alter post-disturbance invasibility. Canadian Society for Ecology and Evolution, Ottawa, 2012.
- Symons, C.C.**, Sweetman, J.N.\*, Pedruski, M and Arnott, S.E. Evaluating the impacts of recent environmental change on freshwater ecosystems in Wapusk National Park. International Polar Year, Montreal, 2012.

**Symons, C.C.\***, Arnott S.E., Sweetman, J.N, Lemmen, K.D., and Pedruski, M. Community response to environmental change in Wapusk National Park lakes and ponds. Queen's University Arctic Day, Kingston, 2012.

**Symons, C.C.\***, Arnott S.E. and Sweetman, J.N. The adaptability of zooplankton communities undergoing environmental change. Society of Canadian Limnologists, Moncton, New Brunswick, 2012.

**Symons, C.C.\***, Arnott, S.E., Sweetman, J.N. Nutrient Limitation and Zooplankton Grazing Control of Phytoplankton Biomass in Subarctic Lakes, Wapusk National Park, Manitoba. Science for a Changing North II – Sudbury Restoration Workshop, Sudbury, Ontario, 2011.

**Symons, C.C.\***, Arnott S.E. and Sweetman, J.N. Controls on phytoplankton biomass in Subarctic lakes: Nutrient limitation and zooplankton grazing. Churchill Northern Studies Centre and Parks Canada Science Symposium, Winnipeg, Manitoba, 2011.

**Symons, C.C.\***, Arnott S.E. and Sweetman, J.N. Controls on phytoplankton biomass in Subarctic lakes: Nutrient limitation and zooplankton grazing. Society of Canadian Limnologists, Toronto, Ontario, 2011.

**Symons, C.C.\***, Arnott S.E. and Sweetman, J.N. The nutritional status of Subarctic lakes in Wapusk National Park. Society of Canadian Limnologists, Winnipeg, Manitoba, 2010.

### **INVITED SEMINARS**

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UC Irvine, Ecology and Evolutionary Biology, March 2018. The importance of traits in shaping community responses to changing conditions from Subarctic to alpine lakes. Irvine, California.

UC Berkeley, Wildlife, Fisheries, and Conservation Biology Seminar Series, November 2017. Zooplankton dispersal, turnover and adaptation provide ecosystem resilience to environmental change. Berkeley, California.

Netherlands Institute of Ecology (NIOO-KNAW), Aquatics Group Seminar Series, November 2014. Ecological responses to predators and temperature in alpine lakes. Wageningen, Netherlands.

Queen's University, Ecology, Evolution and Behavior Seminar Series, April 2012. Priority effects reduce the invasibility of communities post disturbance. Kingston, Ontario.

### **WORKING GROUPS**

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Selected participant for Eco-DAS XIII (Ecological Dissertations in the Aquatic Sciences), a symposia and working group for early-career aquatic scientists

'Governance and Surprise', Socio-Environmental Synthesis Center, Maryland MD, 2015-2016

### **TEACHING EXPERIENCE**

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#### *Awards*

Excellence in teaching in the Biological Sciences, UC San Diego, 2013-2014

***Instructor***

BIOE 295 – Temperature effects on animal life history: from historical pattern to current process (Co-instructor), UC Santa Cruz, 2018

***Guest Lectures***

BIOE 155, Freshwater Ecology, University of California, Santa Cruz. October 2018. Title: “Lake organisms and adaptations”

REU seminar series, Sierra Nevada Research Institute. July 2015. Title: Climate constrains lake community and ecosystem response to introduced predators.

Biol 410, Ecology of Lakes and Streams, Queen’s University. February, 2012. Title: “The role of dispersal in the adaptability of disturbed zooplankton communities.”

***Public Lectures***

Potluck seminar, Sierra Nevada Research Institute, Wawona, CA, August 2014

White Mountain Field Station Open House, White Mountain, CA, August 2014

Research in Action presenter, Churchill Northern Studies Centre, July 2011

***Teaching assistantships***

The Evolution of Infectious Disease, UC San Diego, BIEB-152, 2016

Biostatistics, UC San Diego, BIEB-100, 2015

Introductory Ecology: Organisms and Habitat, UC San Diego, BIEB-102, 2013, 2014

Aquatic Ecology Lab. UC San Diego, BIEB-135, 2013

Community and Ecosystem Ecology, Queen’s University, Biol-303, 2012

Evolutionary Ecology of Humans, Queen’s University, Biol-350, 2010

Ecology of Stressed and Recovering Ecosystems (field course), Queen's University, Biol-307, 2010, 2012

**RESEARCH STUDENTS MENTORED**

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C. Banach, UC San Diego, Class of 2017 – Co-advised senior research project

K. Cortez, UC San Diego, Class of 2016 – Advised independent research project

M. Quon, UC San Diego, Class of 2016 – Advised independent research project

B. Güell, UC San Diego, Class of 2015 – Received summer research funding

L. Jansen, UC San Diego, Class of 2013 – Co-advised senior research project

D. Zheng, Queen’s University, Class of 2012 – Received summer research funding

J. Hanschell Queen’s University, Class of 2011 – Co-advised senior research project

**SERVICE AND OUTREACH ACTIVITIES**

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***Professional service***

Reviewer for: *Ecology Letters*, *Proceedings of the Royal Society B*, *PLOS Biology*, *Ecology*, *Global Change Biology*, *Frontiers in Ecology and Evolution*, *Journal of Animal Ecology*, *Oikos*, *Freshwater Biology*, *Aquatic Ecology*, *Canadian Journal of Fisheries and Aquatic Sciences*, *Hydrobiologia*, *PLOS ONE*, *Arctic*, *Alpine and Antarctic Research*

Session Chair and moderator, Churchill Northern Studies Centre and Parks Canada Science Symposium, Winnipeg, Manitoba, January 2011

***University service***

Co-leader of the R Users Group, 2013-2016  
Member of the International Graduate Student Taskforce, 2016  
Member of the Biological Sciences Retreat Committee, 2016  
Student representative on the Academic Senate Diversity Committee, 2015, 2016  
Biology representative to the Graduate Student Association, 2015, 2016  
Member of the Graduate Student Diversity Committee, 2015, 2016  
Student member of the Biology Graduate Committee, 2015  
Organizer of Biology Graduate Seminar Series, EBE, 2015  
Co-organizer of the Ecology and Evolution Journal Club, 2015  
Student member of UC San Diego Admissions Committee, 2014  
Organized graduate student meetings with job candidates, 2014  
Biological Sciences graduate student recruitment committee, 2012, 2013  
Biology Graduates Committee Social Coordinator, 2011, 2012  
Representative of the Biology Graduates Committee for the Society of Graduate and Professional Students Committee 2010, 2011

***Outreach***

Trout in the classroom volunteer, January 2018  
Greater San Diego Science and Engineering Fair judge, March 2013, 2014, 2015  
Science pen pal program, 2013-2015  
Science Rendezvous Kingston, May 2011  
Frontenac, Lennox, and Addington Regional Science Fair judge, April 2011, 2012  
Volunteer at Biodiversity Day, organized by the Society for Conservation Biology, Kingston, April 2011