

## **Douglas D. Karrow, Ph.D.**

### **A. Formal Education**

- 2006 Doctor of Philosophy (Curriculum, Teaching and Learning)  
*Educating-within-place: Metaphysics beyond Technicity.*  
Unpublished doctoral dissertation.  
Department of Curriculum, Teaching and Learning  
Faculty of Education  
The Ontario Institute for Studies in Education of the University of Toronto,  
ON.
- 1997 Master of Education (Educational Studies)  
*Science teachers' views of creativity.*  
Unpublished master's thesis.  
Faculty of Education  
The University of Western Ontario, London, ON.
- 1988 Bachelor of Education (Junior/Intermediate Division)  
Faculty of Education  
The University of Western Ontario, London, ON.
- 1987 Bachelor of Science (Honours Biology)  
Faculty of Science  
The University of Waterloo, ON.

### **B. Academic Distinctions, Awards, and Scholarships**

- 2010 Awarded tenure and promotion to Associate Professor, Department of Teacher Education, Faculty of Education, Brock University, ON.
- 2008 Selected as a Canadian delegate for Al Gore's *The Climate Project (TCP)*  
Montreal, QC.
- 2006 Promoted to Assistant Professor, Department of Teacher Education, Faculty of Education, Brock University, ON.
- 2004 Lecturer, Department of Teacher Education, Faculty of Education, Brock University, ON.
- 2002 Invited to present a paper at the Seventh International History, Philosophy and Science Teaching (IHPST) conference by the Imperial Oil Centre for Science, Mathematics and Technology Education, The Ontario Institute for Studies in Education of University of Toronto, Winnipeg, MB.
- 2001-2004 Awarded Graduate Assistantships  
Ontario Institute for Studies in Education of the University of Toronto, ON.
- 2001- Awarded Ontario Teaching Assistantships

- 2004 Institute for Studies in Education of the University of Toronto, ON.
- 1999 Nominated and Awarded *Teaching for Excellence*  
Bluewater District School Board, Chesley, ON.
- 1998 Sponsorship to attend The Keystone Science School  
Bluewater District School Board and Hobart Industry, Chesley, ON.
- 1997 First Class Standing, Master of Education  
The University of Western Ontario, London, ON.
- 1994 Awarded Teaching Assistantship  
University of Western Ontario, London, ON.
- 1994 Awarded Sabbatical Leave to pursue graduate studies in education  
Bluewater District School Board, Chesley, ON.
- 1988 Dean's Honour Roll, Bachelor of Education  
The University of Western Ontario, London, ON.

### C. Academic Positions Held

- 2010- *Associate Professor*, Faculty of Education, Brock University
- 2006- *Assistant Professor* (Tenure Stream), Faculty of Education, Brock  
2010 University
- 2004- *Lecturer*, Faculty of Education, Brock University  
2006
- 2004 *Lecturer*, Faculty of Arts and Sciences, University of Toronto
- 2003 *Lecturer*, Faculty of Arts and Sciences, University of Toronto
- 1999- *Teaching Assistant*, Department Curriculum, Teaching and  
2003 Learning, University of Toronto
- 1996- *Elementary School Teacher (Intermediate grades) and Nipissing*  
1998 *University Associate Teacher*, James A. Magee Community  
School Bluewater District School Board, Chesley, ON.
- 1990- *Elementary School Teacher (Junior-Intermediate grades)*  
1996 Holland-Chatsworth Community School, Bluewater District School Board,  
Chesley, ON.
- 1988- *Elementary School Teacher (Junior-Intermediate grades)*

1990 Dundalk Proton Community School, Bluewater District School Board,  
Chesley, ON.

## D. Creative and Scholarly Activities

### 1. Publications (*P* = primary author, *E* = co-author, *S* = co-author secondary)

#### (a). Books

**(P) Karrow, D.**, DiGiuseppe, M. (Eds.). (2019). *Environmental and sustainability education: Canadian perspectives*. Cham, Switzerland: Springer Nature AG. (327pages). ISBN: 978-3-030-25015-7.

**(P) Karrow, D.**, DiGiuseppe, M., Elliott, P., Gwekwerere, Y., & Inwood, H. (Eds.). (2016). *Canadian perspectives on initial teacher environmental education praxis*. Ottawa, ON: Canadian Association for Teacher Education (CATE) (232 pages). ISBN [978-0-9947451-5-6](#)

**(P) Karrow, D.** (2010). *Educating-within-place: Recovering from metaphysics as technicity*. Saarbruken, Germany: Lambert Academic Publishing. (203 pages) ISBN 978-3-8383-6565-7

#### (b). Chapters in Books

**(P) Karrow, D.**, DiGiuseppe, M., & Inwood, H. (2019). Environmental and sustainability education in teacher education. In D. Karrow & M. DiGiuseppe (Eds.), *Environmental and sustainability education in teacher education: Canadian perspectives*, (pp. 1-20). Cham, Switzerland: Springer Nature AG. ISBN: 978-3-030-25015-7

**(P) Karrow, D.**, DiGiuseppe, M. (2019). Connecting Canadian preservice teacher environmental and sustainability education with international practices. In D. Karrow & M. DiGiuseppe (Eds.), *Environmental and sustainability education in teacher education: Canadian perspectives*, (pp. 305-320). Cham, Switzerland: Springer Nature AG. ISBN: 978-3-030-25015-7

**(S) Sperling, E.**, Hoeg, D., & **Karrow, D.** (2019). A syllabus for outdoor and environmental education: Assessing capacities for preservice teachers. In D. Karrow & M. DiGiuseppe (Eds.), *Environmental and sustainability education in teacher education: Canadian perspectives*, (pp. 237-252). Cham, Switzerland: Springer Nature AG. ISBN: 978-3-030-25015-7

- (P) **Karrow, D.** DiGiuseppe, M., Elliott, P., Inwood, H., & Fazio, X. (2019). What should Canadian teachers know? Teacher capacities: knowledge, skills, and dispositions. In D. Karrow & M. DiGiuseppe (Eds.), *Environmental and sustainability education in teacher education: Canadian perspectives*, (pp. 89-110). Cham, Switzerland: Springer Nature AG. ISBN: 978-3-030-25015-7.
- (P) **Karrow, D.**, Harvey, S., & Yu, J. (2019). Critical theory's nod to Heidegger: Contributions of phenomenological ontology to teacher education research. In K. Nolan & J. Tupper (Eds.), *Beyond the technical rational: Drawing on social theory for teacher education research*, (pp. 243-262). New York, NY: Bloomsbury. ISBN 9784-1-3500-8639-5
- (P) **Karrow, D.** DiGiuseppe, M., Elliott, P., Inwood, H., & Fazio, X. (2016). Initial teacher environmental education capacities. In M. Hirschhorn & J. Mueller (Eds.), *What should Canadian teachers know? Teacher capacities: knowledge, skills, and dispositions*, (pp. 162-191). Ottawa, ON: Canadian Association for Teacher Education (CATE). ISBN 978-0-9947451-6-3
- (P) **Karrow, D.** DiGiuseppe, M., Elliott, P., & Inwood, H. (2016). Introduction to Canadian perspectives on initial teacher environmental education praxis. In D. Karrow, M. DiGiuseppe, P. Elliott, Y. Gwekwerere, & H. Inwood (Eds.), *Canadian perspectives on initial teacher environmental education praxis*, (pp. 1-16). Ottawa, ON: Canadian Association for Teacher Education (CATE). ISBN 978-0-9947451-5-6
- (P) **Karrow, D.** (2016). Pedagogically succeeding in life: Executing a consequently unprepared program. In N. Ng-A-Fook, A. Ibrahim, & G. Reis (Eds.), *Provoking curriculum studies: Strong poetry and arts of the possible*, (pp. 227-234). Florence, KY: Taylor & Francis Group (9 pages).
- (S) Fazio, X., & **Karrow, D.** (2015). The commonplaces of schooling and citizen science. In M. P. Mueller and D. J. Tippins (Eds.), *Ecojustice, citizen science and youth activism: Situated tensions for science education*, (pp. 179-191). Dordrecht, NLD: Springer Publications (12 pages).
- (S) Fazio, X., & **Karrow, D.** (2014). From local observations to global relationships. In M. P. Mueller, D. J. Tippins, and A. J. Stewart (Eds.), *Assessing schools for generation R (responsibility): A guide to legislation and school policy in science education*, (pp. 333-346). Dordrecht, NLD: Springer Publications (18 pages).

- (P) **Karrow, D.**, & Fazio, X. (2010). Educating-within-place: Enactments of care within citizen science for ecojustice. In D. J. Tippins, M. P. Mueller, M. van Eijck, J. D. Adams (Eds.), *Cultural studies and environmentalism: The confluence of eco-justice, place-based (science) education, and indigenous knowledge systems*, (pp. 193-214). Dordrecht, NLD: Springer Publications (23 pages).
- (E) Geddis, A., & **Karrow, D.** (2003). Exploring science teachers' views of creativity. In D. Hodson (Ed.), *OISE papers in STSE education volume 4* (pp. 154-172). Toronto: University of Toronto Press (18 pages).

(c). Papers in Peer Refereed Journals

- (P) **Karrow, D.**, & Howard, P. (in-press). Research activities of the Canadian standing committee on environmental and sustainability education in teacher education. *Canadian Journal of Environmental Education*, 23(1), XX-YY.
- (S) Docherty-Skippen, S., **Karrow, D.**, Ahmed, G. (in-press). Pre-service teachers' attitudes toward teaching science and technology. *Brock Journal of Education*, XX(Y), ZZ-ZZZ.
- (P) **Karrow, D.**, Khan, S., & Fleener, Y. (2017). Mathematics education's ethical relation with and response to climate change. *Philosophy of Mathematics Education Journal*. 32(Special Issues on Mathematics Education and the Living World: Responses to Ecological Crisis). ISBN: 1465-2978.
- (P) **Karrow, D.**, & Fazio, X. (2015): Curricular critique of an environmental education policy: Implications for practice. *Brock Journal of Education*. 24(2). 88-108.
- (S) Fazio, X., & **Karrow, D.** (2013). Exploring the professional characteristics and contexts of school-based environmental education 'leaders.' *Alberta Journal of Educational Research*, 59(4), 613-629.
- (S) Fazio, X., & **Karrow, D.** (2012). Negotiating the constraints of schools: Environmental education practices within a school district. *Environmental Education Research*, 19(5), 639-655.
- (P) **Karrow, D.** (2010). Ecophenomenology as ecosophical education: The liminality of swamps. *Trumpeter*, 26(3), 91-110.
- (P) **Karrow, D.**, Fazio, X. (2010). Viewpoint: NatureWatch, schools and environmental education practice. *Canadian Journal of Science, Mathematics and Technology Education*, 10(2), 160-172.

- (E) Kentel, J., **Karrow, D.** (2009). (Ek)static educating: Educating-within-place and the ecological imagination. *Journal of the Canadian Association for Curriculum Studies*, 7(2), 6-29.
- (S) Hart, P., Fazio, X., **Karrow, D.**, et al (2009). Canadian perspectives on environmental education. *Educação em Revista*, 25(3), 159-190.
- (P) **Karrow, D.**, Kentel, J., & Henderson, B. (2007). Paul Shepard: In thought, word and deed. *Trumpeter*, 23(3), 26-44.
- (P) **Karrow, D.**, Andrachuk, H., & Fazio, X., (2007, February). Using NatureWatch to create communities of engagement in schools. *The EMAN Monitor*, 5(1), 1-16.
- (E) Kentel, J., & **Karrow, D.** (2007). Mystery and the body: Provoking a deep ecology through the situated bodies of teacher candidates. *Complicity: An International Journal of Complexity and Education*, 4(1), 85-101.
- (P) **Karrow, D.** (1995). Egan and imagination in education. *Journal of the Ontario Society for Education through Art*, 24, 45-47.

(d) Book Reviews

- (P) **Karrow, D.** (2011). [Review of the book *Fields of Green: Re-storying culture, environment, and education.*] *Canadian Journal of Education*, 34(4), 236-239.

(e). Senior Scholars' Letters of Reference (available on request)

(f). Published Refereed Conference Proceedings

- (S) Fazio, X., & **Karrow, D.** (2008). Implementation of *NatureWatch*: Ecological monitoring program within a local elementary school [Abstract]. *Proceedings of the Association for Science Teacher Education (ASTE)*, St. Louis, MO. Available from: <http://theaste.org/publications/index/htm>.
- (P) **Karrow, D.**, & Kentel, J. A. (2007). Educating-within-place: Place, Being and the ecological imagination [Abstract]. *Proceedings of the 5<sup>th</sup> International Conference on Imagination and Education*. Vancouver, BC. Available from: <http://www.ierg.net/confs/viewabstract.php?id=311&cf=2>.
- (P) **Karrow, D.** (2007). Metaphysics and Physis: An alternate disposition for the teaching and learning relationship in science education.

*Proceedings of the National Association for Research in Science Teaching (NARST)*, New Orleans, LA, 1124-1158.

**(P) Karrow, D. & Kentel, J. A.** (2005). Educated myopia: Permeating the boundaries of the pre-service teacher-training model [Abstract]. *Proceedings of the Imaginative Education Research Group (IERG) Conference*, Available from: [http://www3.educ.sfu.ca/conferences/ierg2005/papers/062-Karrow\\_Kentel.pdf](http://www3.educ.sfu.ca/conferences/ierg2005/papers/062-Karrow_Kentel.pdf). Vancouver, BC.

**(P) Karrow, D.** (2003). Place, metaphysics and technology: Place-based science education. *Proceedings of the Seventh International History, Philosophy and Science Teaching Conference (IHPST)*, Winnipeg, Canada, 7. 418-435.

(g). Contributions to Panels, Workshops and Clinics

**Karrow, D., & Sperling, E.** *Developing a sense of place and being*. Workshop delivered at the Canadian Network for Environmental Education and Communication (EECOM) conference, Cranbrook, BC., October 18-21, 2018.

**Karrow, D.** (2015). *Exploring models for integrating environmental education in faculties of education*. Workshop presented at the University of Ontario Institute of Technology (UOIT), Oshawa, Ontario, March 7, 2015.

Inwood, H., Cousineau, A., DiGiuseppe, M., Elliott, P., & **Karrow, D.** (November, 2014). Presentation to the Ontario Association of Deans of Education (OADE), Toronto, Ontario, November 21, 2014.

**Karrow, D. & Fazio, X.** (October, 2014). *How to integrate environmental education within K-12 education*. Workshop presented at the North American Association for Environmental Education (NAAEE), Ottawa, Ontario, October 7-11.

Engemann, J., Fazio, X., Jaipal-Jamini, K., & **Karrow, D.** (November, 2010). *Equity for science and technology education within our schools*. Paper presented at the Science Teachers' Association of Ontario (STAO), Toronto, ON.

Engemann, J. Fazio, X., Jaipal-Jamini, K., & **Karrow, D.** (November, 2009). *Exploring science education research collaborations between boards of education and Brock University*. Panel discussion with Golden Horseshoe science consultants and Brock University science education faculty, Hamilton, ON.

**Karrow, D.** (November, 2008). *Using the story form as a framework for STSE education: The story of the York boat and Archimedes' principle.* Workshop presented at the Science Teachers' Association of Ontario (STAO), Toronto, ON.

Fazio, X. & **Karrow, D.** (November, 2008). *Promoting environmental education through a school, university and community partnership.* Workshop presented at the Science Teachers' Association of Ontario (STAO), Toronto, ON.

**Karrow, D.**, Fazio, X., Daniels, C. & Andrachuk, H. (May, 2008). *NatureWatch as environmental education: Lessons learned within elementary schools.* Workshop presented at the annual conference of the Ontario Society of Environmental Education (OSEE), Bark Lake Leadership Centre, ON.

**Karrow, D.**, & Fazio, X. (May, 2008). Ministry of Education Forum *Preparing Ontario's teachers for the challenge ahead: Environmental education success stories from Brock university.* Ministry of Education Forum, OISE/University of Toronto, ON.

**Karrow, D.**, & Fazio, X. (April, 2007). *Teaching and learning about climate change.* Workshop presented at the annual conference of the Ontario Society of Environmental Education (OSEE), Kawartha Lakes, ON.

**Karrow, D.** (July, 2006). *The story of the York boat: Settlement of the west and Archimedes' principle.* Workshop presented at the 4<sup>th</sup> International Conference on Imagination and Education, Vancouver, BC.

**Karrow, D.**, & Fazio, X. (May, 2006). *Teaching and learning about climate change.* Workshop presented at the annual conference of the Ontario Society for Environmental Education (OSEE), Waterloo, ON.

**Karrow, D.** (December, 2004). *Navigating the dissertation journey.* Panel discussion for Brock University graduate students, Brock University, St. Catharines, ON.

- (h). Consulting with government, related professionals, and agencies, or preparation of instructional clinical, curriculum or policy materials for such agencies.

2017 Ontario College of Teachers, faculty of education participant in *Open Space Policy Forum: Ecological Sustainability within Teacher Education and Professional Practice.*

2016 Faculty of Education, Trent University, planning committee member,

*National Roundtable 2016: Sustainability and Environmental Education in Canadian Faculties of Education.*

- 2015 Ryerson Urban Water Institute, Ryerson University, faculty participant in *An education experts' workshop: Implementing 2007 Bondar report's 'intended outcomes' by 2015.*
- 2013 The OISE/UT Environmental and Sustainability Working Group and the Dr. Eric Jackman Institute of Child Study (ICS) *Deepening environmental education in pre-service education roundtable (DEEPER)*. Developing a framework for environmental education within pre-service education across Faculties of Education within Ontario, Toronto, ON.
- 2008 Ministry of Education Environmental Education Policy, faculty representative, Toronto, ON.
- 2008 Ministry of Education Ontario Grades 1-8: Science and Technology, curriculum fact checker, Toronto, ON.
- 2007 Ministry of Education Ontario Grades 9 and 10: Science, curriculum review, Toronto, ON.
- 2006 Ministry of Education Ontario Grades 1-8: Science and Technology, curriculum review, elementary faculty representative, Toronto, ON.
- 2005 Ministry of Education, Boys and Literacy Symposium, faculty representative, Toronto, ON.

(i). Editorial and Refereeing Duties

- 2019 Guest editor for *Canadian Journal of Environmental Education (CJEE)*, 16 reviews.
- 2019 Journal article reviewer for *International Journal of Environmental Education (IJEE)*, 1 review.
- 2018 Book chapter reviewer for Bloomsbury book, 2 reviews.
- 2018 Journal article reviewer for *Canadian Journal of Science, Mathematics, and Technology*, 1 review.
- 2018 Journal article reviewer for *Brock Journal of Education (BJE)*, one review, St. Catharines, ON.

- 2018 Reviewer for the North American Association for Environmental Education (NAAEE), sixteen reviews, Spokane, WA.
- 2017 Journal article review for *Environmental Education Research* (EER), one review.
- 2016 Book chapter reviewer for *Canadian Association for Teacher Education* (CATE) working conference, 3 reviews.
- 2016 Journal article reviewer for *Philosophy of Mathematics Education Journal* (PMEJ), two reviews, University of Exeter, UK.
- 2016 Journal article reviewer for the *Journal of the Canadian Association for Curriculum Studies* (JCACS), one review, York University, Toronto, ON.
- 2016 Reviewer for *National Roundtable 2016: Environmental and Sustainability Education in Canadian Faculties of Education*, 35 roundtable submission reviews.
- 2015 External examiner, Howard, R. (2015). *The conceptualization and exploration of place allegiance: Towards a unified model of person-place relationships within outdoor education*. Unpublished doctoral thesis. Faculty of Applied Health Sciences, Brock University, St. Catharines, ON.
- 2015 Journal article reviews for the *Brock Journal of Education* (BJE), two reviews, St. Catharines, ON.
- 2014 Journal article review for the *Canadian Journal of Science, Mathematics, and Technology Education* (CJSMTE), one review, Toronto, ON.
- 2014 Reviewer and editor for *DEEPER: Deeping environmental education in pre-service education resource*. OISE/University of Toronto, ON.
- 2013 Reviewer for Science Education Research Group (SERG), a SIG of the Canadian Association for Curriculum Studies (CACS) of the Canadian Society for Studies in Education (CSSE), three reviews, Brock University, St. Catharines, ON.
- 2013 Journal article review for *Environmental Education Research* (EER), one review,
- 2013 Journal article review for the *Journal of the Canadian Association for Curriculum Studies* (JCACS), one review, York University, Toronto, ON.

- 2013 Journal article review for *Canadian Journal of Science, Mathematics, and Technology Education* (CJSMTE), one review, OISE/University of Toronto, ON.
- 2012 Journal article review for *Cultural Studies in Science Education* (CSSE), one review, University of Victoria, BC.
- 2012 Journal article review for *Brock Journal of Education* (BJE), one review, St. Catharines, ON.
- 2012 Reviewer for the Research Symposium of the North American Environmental Education Association (NAAEE), five reviews, Oakland, CA.
- 2012 Journal article review, for the *Canadian Journal of Environmental Education* (CJEE), one review, Lakehead University, Thunder Bay, ON.
- 2011 Journal article review, for the *Canadian Journal of Environmental Education* (CJEE), one review. Lakehead University, Thunder Bay, ON.
- 2011 External examiner, Ritter, A. (2011). *Ecological concept development at the elementary school level*. Unpublished master's thesis. Faculty of Education, Lakehead University, Thunder Bay, ON.
- 2010 Reviewer for the Ecological/Environmental Education SIG of the American Education Research Association (AERA), seven reviews, New Orleans, LA.
- 2010 Paper review for Dr. Jaipal-Jamani (2010). *A semiotics discourse analysis framework: Understanding meaning-making in science education contexts*. Faculty of Education, Brock University.
- 2010 External examiner, Clark, A. (2010). *An investigation of the influence guiding students' ethics in regard to socio-scientific issues*. Unpublished master's thesis. Faculty of Education, Lakehead University.
- 2010 Reviewer for the North American Association for Environmental Education (NAAEE), three reviews, Buffalo, NY.
- 2010 Reviewer for the International Organization for Science and Technology Education (IOSTE), five reviews, Bled, Slovenia.

- 2010 Journal article review for the *Canadian Journal of Environmental Education* (CJEE), two reviews. Lakehead University, Thunder Bay.
- 2009 Reviewer for the Ecological/Environmental Education SIG of the American Education Research Association (AERA), five reviews, Denver, CO.
- 2008 Reviewer for the Canadian Association for Curriculum Studies (CACCS) of the Canadian Society for Studies in Education (CSSE), two reviews, Vancouver, BC.
- 2008 Reviewer for Science Education Research Group (SERG), a SIG of the Canadian Association for Curriculum Studies (CACCS) of the Canadian Society for Studies in Education (CSSE), five reviews, Vancouver, BC.
- 2008 Assessor for the Social Sciences and Humanities Research Council Canada (SSHRC).
- 2007 Reviewer for Science Education Research Group (SERG), a SIG of the Canadian Association for Curriculum Studies (CACCS) of the Canadian Society for Studies in Education (CSSE), three reviews, Saskatoon, SK.
- 2006 Journal article review for *Brock Education of Education* (BJE), one review, St. Catharines, ON.
- (j) Scholarly contributions to pedagogy. (Publications or Activities previously listed in Section D may be cross-listed here and identified with an asterisk.)
- \* **Karrow, D.** (April, 2009). *Engaging the pre-theoretical through place-based education: A foundation for environmental/science education*. Paper presented at the National Association for Research in Science Teaching (NARST), Garden Grove, CA
- \* **Karrow, D., & Fazio, X.** (May, 2008). Ministry of Education Forum *Preparing Ontario's Teachers for the Challenge Ahead: Environmental Education Success Stories from Brock University*. Ministry of Education Forum, OISE/University of Toronto, ON.
- \* **Karrow, D.** (April, 2007). Metaphysics and Physis: An alternate disposition for the teaching and learning relationship in science education. *Proceedings of the National Association for Research in Science Teaching* (NARST), New Orleans, LA, 1124-1158.

\* **Karrow, D. & Kentel, J. A.** (May, 2007). *Re-conceptualizing teacher education through the nuance of mystery and the body*. Paper presented at the meeting of the Canadian Association of Teacher Education (CATE) of the Canadian Society of Studies in Education (CSSE), Saskatoon, SK.

\* **Karrow, D. & Kentel, J. A.** (July, 2005). Educated myopia: Permeating the boundaries of the pre-service teacher-training model [Abstract]. *Proceedings of the Imaginative Education Research Group (IERG) Conference*, Available from: [http://www3.educ.sfu.ca/conferences/ierg2005/papers/062-Karrow\\_Kentel.pdf](http://www3.educ.sfu.ca/conferences/ierg2005/papers/062-Karrow_Kentel.pdf). Vancouver, BC.

(k) Scholarship as evidenced by the candidate's depth and breadth of knowledge and general contributions to the research life of the University

**Karrow, D., Collier, D., Rowsell, J.** (2014). *Program proposal brief: Master of teacher education in disciplinary and integrated studies*. Department of Teacher Education, Faculty of Education, Brock University, St. Catharines, ON.

**Karrow, D., Barrett, J., Bennett, S., Fazio, X., Gallagher, T., Hutchison, D., Lu, C., Maich, K., & Volante, L.** (2012). *Statement of intent for a master of education in disciplinary and integrated studies*. Department of Teacher Education, Faculty of Education, Brock University, St. Catharines, ON.

**Karrow, D., Fazio, X., Hutchison, D., & O'Sullivan, M.** (2010). *Application for approval of a research unit within the teacher education department of the Faculty of Education, Brock University: The research unit for global education and environmental education (RUGEE)*. Brock University, St. Catharines, ON.

**Karrow, D., Fazio, X., Jaipal-Jamani, K., Gallagher, T., Griffin, S., Hutchison, D. et al.** (2008). *Committee on re-imagining the Faculty of Education, report on activities*. Brock University, St. Catharines, ON.

**Karrow, D., Fazio, X. & Andrachuk, H.** (2006). *A collaborative research proposal for the ecological monitoring and assessment network (EMAN), Brock University Faculty of Education, and the Hamilton-Wentworth District School Board*. Unpublished manuscript, Brock University. St. Catharines, ON.

(l) Other publications demonstrating a high quality of scholarship with significant public impact;

**Karrow, D.** (1995). *Imagination and education*. A Resource for Teachers, Bluewater District School Board, Chesley, ON.

**Karrow, D., & Sebesta, J.** (1992). *Visual literacy*. Transition Years Pilot Project, Bluewater District School Board, Chesley, ON.

Diemert, V., & **Karrow, D.** (1991). *Without exception*. Multiculturalism Pilot Project, Bluewater District School Board, Chesley, ON.

(m) Other evidence appropriate to the discipline

*Papers in Non-refereed Journals*

**(P) Karrow, D.,** Bell, N., DiGiuseppe, M., Elliott, P., & Inwood, H. (2018). Training teachers in environmental sustainability. *Alternatives Journal*, 43(3 & 4), 51.

**(S) Fazio, X., & Karrow D.** (2013). Science takes a back seat: Unintended consequences of prioritizing one subject area over another. *Education Canada*. 53(3).

**(P) Karrow, D., & Fazio, X.** (2007, October 15). Ecological monitoring cuts hurt us all. *The Hamilton Spectator*, p. A15.

**(P) Bencze, L.** (2007, July) Newsround: NatureWatch. *Canadian Journal of Science, Mathematics, and Technology Education*. 7(2/3), 271-274.

*Refereed Conference Papers*

**Karrow, D.** *Is another mathematics possible? Mathematics and the living world.* (April, 2019). Symposia chair for the SIG—Research in Mathematics Education, of the American Educational Research Association (AERA), Toronto, ON., April 5-9, 2019.

Khan, S., **Karrow, D.,** & Fleener, J. *Is another mathematics possible? Mathematics and the living world.* (April, 2019). Paper for symposium presented at the SIG—Research in Mathematics Education, of the American Education Research in Education (AERA), Toronto, ON., April 5-9, 2019.

**Karrow, D. & Harvey, S.** (April, 2019). *A 'doctrine of mystery' as a philosophy of education.* Paper presented at roundtable of the SIG—Philosophical Studies in Education, of the American Educational Research Association (AERA), Toronto, ON., April 5-9, 2019.

DiGiuseppe, M., Kool, R., **Karrow, D.,** Donnell, A., Howard, P., Lin, E., McVitte, J., Sims, L., Sperling, E., & Vanwynsberghe, R. (April, 2019). *Assessing the state of Canadian environmental sustainability education in teacher education in a post-truth era.* Paper presented at

the SIG—Environmental Education, of the American Educational Research Association (AERA), Toronto, ON., April 5-9, 2019.

**Karrow, D., & DiGiuseppe, M.** (October, 2018). *Situating Canadian environmental and sustainability preservice teacher education in the international scene.*

Poster presented at the 47<sup>th</sup> Annual North American Association for Environmental Education, Spokane, WA., October 11-13, 2018.

**Karrow D., DiGiuseppe, M., Elliott, P., Inwood, H.** (October, 2018). *The Canadian national roundtable for environmental sustainability education in teacher education.* Bright-spot presented at the 47<sup>th</sup> Annual North American Association for Environmental Education (NAAEE) conference, Spokane, WA., October 11-13, 2018.

**Karrow, D., & DiGiuseppe, M.** (October, 2018). *Situating Canadian environmental and sustainability preservice teacher education in the international scene.*

Paper presented at the Research Roundtable of the Canadian Network for Environmental Education and Communication (EECOM) conference, Cranbrook, BC., October 18-21, 2018.

Sperling, E., Hoeg, D., & **Karrow, D.** (May, 2018). *A direction for outdoor and environmental education: Assessing and addressing UNECE capacities for preservice teachers.* Paper presented at the Canadian Association for Curriculum Studies (CACS) of the Canadian Society for the Study of Education (CSSE), Regina, SK., May 28-30, 2018.

Elliott, P., Bell, N., DiGiuseppe, M., **Karrow, D., & Inwood, H.** (October, 2017). *Prioritizing environmental and sustainability education in Canadian teacher education.* Paper presented at the 9<sup>th</sup> Annual World Environmental Education Congress (WEEC), Vancouver, BC., September 9-15, 2017.

DiGiuseppe, M., Bell, N., Elliott, P., **Karrow, D., & Inwood, H.** (October, 2017). *Environmental and sustainability teacher preparation: A global perspective.* Paper presented at the 9<sup>th</sup> Annual World Environmental Education Congress (WEEC), Vancouver, BC., September 9-15, 2017.

**Karrow D., DiGiuseppe, M., Elliott, P., Gwekwerere, Y., & Inwood, H.** (May, 2017). *Canadian teachers perspectives on initial teacher environmental education.* Symposium presented at the Canadian Association for Teacher Education (CATE) of the Canadian Society for the Study of Education (CSSE), Toronto, ON., May 27-June 2, 2017.

- Karrow, D.**, DiGiuseppe, M., Elliott, P. & Inwood, H. (May, 2017). *What might environmental education look like in K-12 schools and initial teacher education? Reconciling policy with practice*. Paper presented the Canadian Association for Curriculum Studies (CACS) of the Canadian Society for the Study of Education (CSSE), Toronto, ON., May 27-June 2, 2017.
- DiGiuseppe, M., Bell, N., Elliott, P., Inwood, H., & **Karrow, D.** (May, 2017). *National roundtable on environmental sustainability education in initial teacher education*. Paper presented the Canadian Association or Curriculum Studies (CACS) of the Canadian Society for the Study of Education (CSSE), Toronto, ON., May 27-June 2, 2017.
- Harvey, S., Fleener, J., **Karrow, D.**, & Yu, J. (April, 2017). *Fanning the flames of curriculum's desire through complicated conversations with Martin Heidegger*. Paper presented at the American Educational Research Association (AERA), San Antonio, TX, April 27-May 1, 2016.
- Karrow, D.**, Harvey, S. (April, 2017). *The 'thalweg' of currents: 'Naturalist' environmental education*. Paper presented at the American Educational Research Association (AERA), San Antonio, TX, April 27-May 1, 2016.
- Harvey, S., **Karrow, D.**, Fleener, J., & Yu, J. (October, 2016). *Questioning teacher education models for a hopeful future: Relationality for ontology*. Paper presented at the 17th Curriculum & Pedagogy conference, Cleveland, OH., October 22-23, 2016.
- Karrow, D.**, & Kentel, J. (July, 2016). *Teaching as reclaiming mystery: The phenomenological possibilities of physis*. Paper presented at the International Human Science Research Conference (IHSRC), Ottawa, Ontario, July 3-7, 2016.
- Karrow, D.**, DiGiuseppe, M., Fazio, X. (June, 2016). *Initial teacher environmental education capacities: What is the role of Ontario's faculties of education?* Paper presented at National Roundtable 2016: Environmental and Sustainability in Canadian Faculties of Education, Peterborough, Trent University, June 16, 2016.
- Sperling, E., & **Karrow, D.** (June, 2016). *A syllabus for outdoor and environmental education: Assessing capacities for preservice teachers*. Paper presented at National Roundtable 2016: Environmental and Sustainability in Canadian Faculties of Education, Peterborough, Trent University, June 16, 2016.

- Karrow, D.**, Elliott, P., Gwekwerere, Y., Howard, P., & Ostertag, J. (June, 2016). *Canadian perspectives on initial teacher environmental education praxis*. Joint session presented at National Roundtable 2016: Environmental and Sustainability in Canadian Faculties of Education, Peterborough, Trent University, June 16, 2016.
- Karrow, D.**, DiGiuseppe, M., Elliott, P., Inwood, H., & Scully, A. (May, 2016). *Facilitating capacity-building and collaborative inquiry in environmental and sustainability education in initial teacher education*. Paper presented at the Ontario Ministry of Education Faculty Forum, Toronto, Ontario, May, 13, 2016.
- Harvey, S. & **Karrow, D.** (April, 2016). *Curi-awe-sity: Resituating wonder's attributes in environmental education*. Paper presented at the American Educational Research Association (AERA), Washington, DC, April 8-12, 2016.
- Karrow, D.** DiGiuseppe, M. & Fazio, X. (April, 2016). *Teasing through the rhetoric of 'integration': Moving environmental education from the margins to the mainstream*. Paper presented at the American Educational Research Association (AERA), Washington, DC, April 8-12, 2016.
- Karrow, D.**, Harvey, S. (April, 2016). *Heidegger's doctrine of mystery: Educational implications beyond metaphysics as presence*. Paper presented at the American Association for the Advancement of Curriculum Studies (AAACS), Washington, DC, April 5-8, 2016.
- Karrow, D.**, DiGiuseppe, M., Elliot, P., Fazio, X., Greenwood, D., Inwood, H. (October, 2015). Paper presented at the 8<sup>th</sup> Canadian Association for Teacher Education (CATE) Working Conference, Toronto, Ontario, November 5-7, 2015.
- Berger, P., Gerum, N., Moon, M., DiGiuseppe, M., Inwood, D., Cousineau, A., **Karrow, D.**, & Elliott, P. (May, 2015). *Nudging environmental and climate change education into the mainstream*. Paper presented at the Ontario Ministry of Education Faculty Forum, Toronto, Ontario, May, 13, 2015.
- Karrow, D.**, & Harvey, S. (May, 2015). *The value of mystery after its distain in education*. Paper presented at the American Educational Research Association (AERA), Chicago, IL, April 16-20.

- Inwood, H., **Karrow, D.**, Ashmann, S., DiGiuseppe, M., Frazen, R., & Elliott, P. (May, 2015). *Questioning the place of environmental education in preservice education*. Paper presented at the American Educational Research Association (AERA), Chicago, IL, April 16-20.
- Karrow, D.** (November, 2014). *An eco-phenomenological journey: Reinvigorating the knowledge-mystery dynamic*. Paper presented at the 9<sup>th</sup> Annual, New Orleans, LA, November 12-15.
- Fazio, X., & **Karrow, D.** (October, 2014). *Exploring the professional characteristics of school-based environmental education leaders*. Paper presented at the North American Association for Environmental Education (NAAEE), Ottawa, Ontario, October 7-11.
- Karrow, D.** & Fazio, X. (October, 2014). *A curricular critique of a provincial environmental education policy framework*. Paper presented at the North American Association for Environmental Education (NAAEE), Ottawa, Ontario, October 7-11.
- Karrow, D.** (October, 2014). *An eco-phenomenological journey: Beginning and ending in wonder*. Paper presented at the Research Symposium of the North American Association for Environmental Education (NAAEE), Ottawa, Ontario, October 7-11.
- Inwood, H., DiGiuseppe, M., Elliott, P., & **Karrow, D.** (October, 2014). *Deepening environmental education in preservice programs*. Paper presented at the North American Association for Environmental Education (NAAEE), Ottawa, Ontario, October 7-11.
- Karrow, D.**, & Fazio, X. (May, 2014). *A curricular critique of Ontario's environmental education policy framework: Acting Today, Shaping Tomorrow*. Paper presented at the Science Education Research Group (SERG), of the Canadian Association of Curriculum Studies (CACS), at the Canadian Society for the Study of Education (CSSE), St. Catharines, Ontario, May 24-31, 2014.
- Bowen, M. Engemann, J., Fazio, X., Jaipal, K., & **Karrow, D.** (May, 2014). *Critical discussions of graduate student progressions through graduate science education programs*. A symposium of the Science Education Research Group (SERG) of the Canadian Association of Curriculum Studies (CACS) of the Canadian Society for the Study of Education (CSSE), St. Catharines, Ontario, May, 2014.
- Kentel, J. A., Ratković, S., **Karrow, D.**, Francis, N., & Nashon, S. (May, 2014). *The apple that falls far from the tree: Troubling the power relation in the academy*. A symposium of the Canadian Society for the Study of Education, St. Catharines, ON.

- Inwood, H., Cousineau, A., DiGiuseppe, M., Elliott, P., & **Karrow, D.** (May, 2014). *Moving deeper into environmental well-being: Using collaboration to facilitate research and practice in faculties of education*. Paper presented at the Ontario Ministry of Education Forum, Ontario Institute for Studies in Education of the University of Toronto, Ontario, May 14, 2014.
- Karrow, D.** (April, 2014). *An eco-phenomenological journey: The constancy of departure, the approximation of arrival*. Paper presented at the American Educational Research Association (AERA), Philadelphia, PA, April 3-7.
- Inwood, H., DiGiuseppe, M., Elliott, P., **Karrow, D.** (February, 2014). *Rolling up our sleeves: Hopeful environmental education practices in pre-service programs*. Paper presented at the Ontario Teachers' Federation/Ontario Association of Deans of Education Conference, York University, Toronto, Ontario, February 22.
- Karrow, D.** (November, 2013). *Heideggerian thoughtfulness: Teaching as reclaiming mystery*. Paper presented at the 8<sup>th</sup> Annual Curriculum & Pedagogy, New Orleans, LA, November 12-15.
- Karrow, D.**, & Fazio, X. (May, 2013). *Meanings of environmental education within Ecoschools*. Paper presented at the American Educational Research Association (AERA), San Francisco, CA, April 27-May 1.
- Karrow, D.** (February, 2013). *Pedagogically succeeding in life: Executing a consequently unprepared program*. Paper presented at the 6<sup>th</sup> Biennial Provoking Curriculum Conference, Ottawa, Ontario, February 22-23.
- Karrow, D.** (November, 2012). *Unveiling the cloak of academic patriarchy: Re-storying who we are and what we do in departments of teacher education*. Paper presented at the 7<sup>th</sup> Annual Curriculum and Pedagogy Conference, New Orleans, LA, November 7-10.
- Karrow, D.**, & Fazio, X. (October, 2012). *Exploring environmental education from a rural education perspective*. Roundtable paper presented at the Research Symposium of the North American Association for Environmental Education (NAAEE), Oakland, CA, October 9-10.
- Karrow, D.**, & Fazio, X. (October, 2012). *How Eco-schools shape teacher understandings of the meaning of environmental education*. Paper presented at the North American Association for Environmental Education (NAAEE), Oakland, CA, October 10-13.

- Fazio, X., & **Karrow, D.** (May, 2012). *Environmental education in schools: Addressing the normative constraints*. Paper presented at the annual Canadian Society for the Study of Education (CSSE) conference, Waterloo, ON.
- Karrow, D.** (March, 2012). *Lessons learned from the research on rural schools and environmental education*. Paper presented at the 17<sup>th</sup> Annual National Congress on Rural Education (NCRE), Saskatoon, SK.
- Fazio, X., & **Karrow, D.** (January, 2012). *Curricular and teaching perspectives of environmental education in schools*. Paper presented at the Association of Science Teacher Education (ASTE) International Conference, Clearwater, FL, January 4-7.
- Karrow, D.** & Fazio, X. (October, 2011). *Environmental education's philosophical roots: Branching beyond the constraints of schooling contexts*. Roundtable paper presented at the 8<sup>th</sup> Annual Research Symposium of North American Association for Environmental Education (NAAEE) conference, Raleigh, NC.
- Fazio, X., & **Karrow, D.** (October, 2011). *Approaches to environmental education in schools: Implications for practice*. Paper presented at the 8<sup>th</sup> Annual Research Symposium of the North American Association for Environmental Education (NAAEE) conference, Raleigh, NC.
- Fazio, X. & **Karrow, D.** (September, 2011). *Environmental education practices in schools: Implications for science education*. Paper presented at the European Science Education Research Association Bi-annual Conference, Lyon, France, September 5-9.
- Karrow, D.**, & Fazio, X. (April, 2011). *A Phenomenological exploration of situative environmental literacy practices within schools*. Roundtable paper presented at the American Educational Research Association (AERA), New Orleans, LA.
- Fazio, X., & **Karrow, D.** (April, 2011). *Exploring school-based environmental education practices*. Paper presented at the National Association for Research in Science Education (NARST), Orlando, FL.
- Karrow, D.**, & Fazio, X. (October, 2010). *Elaborating a theory of place-based education: Natural, cultural and ontological realms of experience*. Paper presented the North American Association for Environmental Education (NAAEE) conference, Buffalo-Niagara, NY.

- Fazio, X., & **Karrow, D.** (October, 2010). *Exploring the role of environmental education policy and community school programs*. Paper presented at the 7<sup>th</sup> Annual Research Symposium of North American Association for Environmental Education (NAAEE) conference, Buffalo-Niagara, NY.
- Karrow, D.**, & Fazio, X. (May, 2010). *What the ontological realm offers place-based education (PBE) theory: Educating-within-place*. Paper presented at the American Educational Research Association (AERA), Denver, CO.
- Fazio, X., & **Karrow, D.** (October, 2009). *Collaborative communities: Exploring a school-university-government ecological monitoring partnership*. Paper presented at the North American Association for Environmental Education (NAAEE), Portland, OR.
- Karrow, D.**, & Fazio, X. (May, 2009). *Playing the "literacy" game: Thwarting the development of environmental education's intrinsic value*. Paper presented at the World Environmental Education Congress (WEEC), Montreal, QC.
- Fazio, X., & **Karrow, D.** (May, 2009). *Promoting environmental education through school-based ecological monitoring: Pitfalls and possibilities*. Poster presented at the World Environmental Education Congress (WEEC), Montreal, QC.
- Karrow, D.** (April, 2009). *Engaging the pre-theoretical through place-based education: A foundation for environmental/science education*. Paper presented at the National Association for Research in Science Teaching (NARST), Garden Grove, CA.
- Karrow, D.**, & Fazio, X. (April, 2009). *Interdisciplinary explorations around the mandate of literacy: Elementary schools as sites for environmental education*. Paper presented at the meeting of the Environmental/Ecological Education Special Interest Group (EEE SIG) of the American Educational Research Association (AERA), San Diego, CA.
- Karrow, D.**, & Fazio, X. (October, 2008). *Ecological monitoring and assessment networks: Elementary schools participation in NatureWatch programs*. Poster presented at the annual North American Association for Environmental Education (NAAEE), Wichita, KA.

- Karrow, D., & Fazio, X.** (May, 2008). *Engaging children in NatureWatch beyond the handmaiden of literacy*. Poster session presented at the meeting of the Science Education Research Group (SERG) of the Canadian Association for Curriculum Studies of the Canadian Society for the Study of Education (CSSE), Vancouver, BC.
- Kentel, J., & **Karrow, D.** (June, 2008). *(Ek)static educating: Exploring locales for intuiting ecological imagination in teacher education*. Paper presented at the meeting of the Canadian Association of Teacher Education (CATE) of the Canadian Society for the Study of Education (CSSE), Vancouver, BC.
- Karrow D., & Fazio, X.** (April, 2008). *A case study of NatureWatch within an elementary school: Schools, teachers, students, and community based monitoring (CBM)*. Paper presented at the National Association for Research in Science Teaching (NARST), Baltimore, MA.
- Fazio, X., **Karrow, D., & Andrachuk, H.** (January, 2008). *Lessons learned from piloting the NatureWatch program within an elementary school*. Paper presented at the National Science Teachers' Association (NSTA), Boston, MA.
- Karrow, D.** (May, 2007). *Educating in science and the organic metaphor of physis*. Poster session presented at the meeting of the Science Education Research Group (SERG) of the Canadian Association for Curriculum Studies at the Canadian Society for the Study of Education (CSSE), Saskatoon, SK.
- Karrow, D., & Kentel, J. A.** (May, 2007). *Re-conceptualizing teacher education through the nuance of mystery and the body*. Paper presented at the meeting of the Canadian Association of Teacher Education (CATE) of the Canadian Society for the Study of Education (CSSE), Saskatoon, Saskatchewan.
- Karrow, D., & Kentel, J. A.** (May, 2007). *Paul Shepard (1925-1996): In thought, word and deed*. Paper presented at the Environmental Studies Association of Canada (ESAC), Saskatoon, Saskatchewan.
- Karrow, D.** (May, 2007). *Response to, 'Texturing one's life-world through technology: The in-between of the textured.'* Paper presented at The Society for Existential and Phenomenological Theory and Culture (EPTC), Saskatoon, Saskatchewan.
- Karrow, D., & Kentel, J.** (May, 2007). *Educating-within-place: Place, being and the ecological imagination*. Paper presented at the 5<sup>th</sup> International Conference on Imagination and Education, Vancouver, BC.

- Karrow, D.** (May, 2007). *Metaphysics as physis: An alternative disposition for the teaching and learning relationship in science education*. Paper presented at the meeting of the National Association for Research in Science Teaching (NARST), New Orleans, LA.
- Kentel, J. A. & **Karrow, D.** (April, 2007). *Resituating the situated bodies of teacher candidates*. Paper presented at the meeting of the American Educational Research Association (AERA), Chicago, Illinois
- Kentel, J. A. & **Karrow, D.** (February, 2007). *Becoming a teacher: Provoking ecological imagination through sensing bodies*. Paper presented at the 3<sup>rd</sup> Biennial Provoking Curriculum Conference, Banff Alberta.
- Kentel, J., & **Karrow, D.** (July, 2006). *Mystery and the body: Site-based experiences of teacher candidates*. Paper presented at the 4<sup>th</sup> International Conference on Imagination and Education (IERG), Vancouver, BC.
- Karrow, D.** (May, 2006). "Wily coyote"--Rural villain or urban hero? *Examining competing "resource" claims as a lens to focus our constructions of cultural and natural environments*. Paper presented at the conference for the Environmental Studies Association of Canada (ESAC), York University, ON.
- Karrow, D.** (April, 2004). *Technological enframing and the ontological crisis: Place-based science education*. Paper presented at the meeting of the National Association for Research in Science Teaching (NARST), Vancouver, BC.
- Karrow, D.** (January, 2004). *STSE education and place-based science education: Creating a dialogue*. Paper presented at the meeting of the Imperial Oil Centre for Studies in Science, Mathematics and Technology Education, Toronto, ON.
- Karrow, D.** (March, 2003). *Place: Education, metaphysics and technology*. Paper presented at the Graduate Students' Diverse Perspectives Conference at The Ontario Institute for Studies in Education of the University of Toronto, ON.
- Geddis, A., & **Karrow, D.** (May, 1998). *Exploring science teachers' views of creativity*. Paper presented at the meeting of the Canadian Association of Curriculum Studies (CACS) of the Canadian Society for the Study of Education (CSSE), Ottawa, ON.

## **2. Works submitted for Publication**

- (a). Books

(b). Book Chapters

(c). Articles in Refereed Journals

**3. Patents applied for or received** (not applicable)

**4. Grants obtained** (*PI = principle investigator, Co-PI = co-principle investigator, C = collaborator*)

(a) internal grants

*Obtained*

2019	<ul style="list-style-type: none"> <li>• Brock Research Initiative Award (RIA)</li> <li>• Brock Office Research Services</li> <li>• Karrow, D. et al.</li> <li>• assistance with SSHRC-PDG application re-submission</li> </ul>	\$2000.00
2019	<ul style="list-style-type: none"> <li>• Research Assistantship Grant</li> <li>• Research and Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• assistance with book publication</li> </ul>	\$1700.00
2018	<ul style="list-style-type: none"> <li>• Research Assistantship Grant</li> <li>• Research and Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• assistance with book editing</li> </ul>	\$1000.00
2017	<ul style="list-style-type: none"> <li>• Research Assistantship Grant</li> <li>• Research and Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• assistance with book prospectus</li> </ul>	\$1700.00
2016	<ul style="list-style-type: none"> <li>• Research Assistantship Grant</li> <li>• Research and Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• book chapter abstract translations</li> </ul>	\$568.33

2015	<ul style="list-style-type: none"> <li>• Research Assistantship Grant</li> <li>• Research and Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• graduate student training: literature review</li> </ul>	\$1700.00
2014	<ul style="list-style-type: none"> <li>• Research Assistantship Grant</li> <li>• Research and Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• graduate student training: conference paper publication</li> </ul>	\$1700.00
2012	<ul style="list-style-type: none"> <li>• Research Assistantship Grant</li> <li>• Research and Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• graduate student training: interview transcription</li> </ul>	\$1700.00
2012	<ul style="list-style-type: none"> <li>• Dean's Research Funds Initiative (RFI)</li> <li>• Research and Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• graduate student training: literature review, report writing, publication assistance.</li> </ul>	\$4500.00
2011	<ul style="list-style-type: none"> <li>• Research Assistantship Grant</li> <li>• Research Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• graduate student training: literature reviews, report writing</li> </ul>	\$1700.00
2010	<ul style="list-style-type: none"> <li>• Research Assistantship Grant</li> <li>• Research and Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• graduate student training: literature reviews, analysis</li> </ul>	\$1700.00
2009	<ul style="list-style-type: none"> <li>• Research Assistantship Grant</li> <li>• Research and Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• graduate student training: data transcription and analysis.</li> </ul>	\$1000.00

- |      |                                                                                                                                                                                                                                                                                                                                                                                                                             |           |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 2008 | <ul style="list-style-type: none"> <li>• Research Assistantship Grant</li> <li>• Research and Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• graduate student training: data analysis and dissemination.</li> </ul>                                                                                                                                                                    | \$1000.00 |
| 2008 | <ul style="list-style-type: none"> <li>• Research Assistantship Grant</li> <li>• Research and Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• graduate student training: data transcription and analysis.</li> </ul>                                                                                                                                                                    | \$1000.00 |
| 2007 | <ul style="list-style-type: none"> <li>• Research Assistantship Grant</li> <li>• Research and Development Committee, Faculty of Education</li> <li>• <b>Karrow, D.</b></li> <li>• graduate student training: data collection and transcription.</li> </ul>                                                                                                                                                                  | \$1000.00 |
| 2008 | <ul style="list-style-type: none"> <li>• <i>Exploring Citizen Science in Secondary Schools</i></li> <li>• Brock SSHRCC Institutional Grant (BSIG)</li> <li>• (PI) Faxio, X. &amp; (Co-PI) <b>Karrow, D.</b></li> <li>• teacher inservice, graduate student training, dissemination.</li> </ul>                                                                                                                              | \$3800.00 |
| 2007 | <ul style="list-style-type: none"> <li>• <i>Piloting NatureWatch within an Elementary School: Citizen Science and Community Based Monitoring</i></li> <li>• Brock University Advancement Fund (BUAF)</li> <li>• <b>(PI) Karrow, D.</b>, &amp; (Co-PI) Fazio, X.</li> <li>• teacher inservice, graduate student training, dissemination, publication</li> </ul>                                                              | \$3600.00 |
| 2007 | <ul style="list-style-type: none"> <li>• <i>Scholarly Learning Community Project: Science Education</i></li> <li>• Dean's Office, Faculty of Education, Brock University</li> <li>• Joe Engemann, Fazio, X., Jaipal-Jamini, K., &amp; <b>Karrow, D</b></li> <li>• meeting facilitation, research into science education graduate programs, science education research collaborations with district school boards</li> </ul> | \$2700.00 |
| 2007 | <ul style="list-style-type: none"> <li>• <i>Scholarly Learning Community Project: Research Unit in Global Education (RUGE)</i></li> <li>• Dean's Office, Faculty of Education, Brock University</li> <li>• <b>Karrow, D.</b>, Fazio, X., Hutchison, D., &amp; O'Sullivan, M.</li> <li>• meeting facilitation, resource sharing.</li> </ul>                                                                                  | \$1700.00 |

- 2006 • *Mystery and the Body: Place-based Experiences of Teacher Candidates* \$1250.00  
 • Research and Development Committee, Faculty of Education  
 • **(PI) Karrow, D.**, & (C) Kentel, J.  
 • graduate student training, dissemination, publication.

- 2006 • *Scholarly Learning Community Initiative: Environmental Education* \$1000.00  
 • Dean's Office, Faculty of Education, Brock University  
 • **Karrow, D.**, Fazio, X., Hutchison, D., & O'Sullivan, M.  
 • meeting facilitation, resource sharing.

*Not Obtained*

- 2016 • Brock SSHRC Institutional Grant (BSIG—special purposes) \$1500.  
 • manuscript preparation
- 2015 • Brock SSHRC Institutional Grant (BSIG—special purposes) \$1500.  
 • manuscript preparation

## (b) external grants

*Applications Under Review*

- 2019-2020 • *Teacher Environmental and Sustainability Education Consortium* \$200,000.  
 • Social Sciences and Humanities Research Council Canada—Partnership Development Grant (SSHRC-PDG)  
 • **Karrow, D.** (Applicant and Project Director), Howard, P. (co-applicant), Elliott, P. (co-applicant), Vanwynsberghe, R. (co-applicant).

*Obtained*

- 2017 • *Developing Environmental Education in Canadian Faculties of Education* \$10,000.  
 • Toronto Dominion Bank Friend of the Environment Fund.  
 • (PI) Hilary Inwood, (C), Elliott, P., (C) DiGiuseppe, M., & (C) **Karrow, D.**
- 2016 • The Symons Trust Fund for Canadian Studies \$1500.  
 • manuscript copy-editing

- 2015 • *Developing Environmental Education in Canadian Faculties of Education* \$25,000.  
 • Toronto Dominion Bank Friends of the Environment Fund.  
 • (PI) Elliott, P, (Co-PI) Inwood, H., (C) DiGiuseppe, M., (C) **Karrow, D.**
- 2010 • *Exploring Environmental Literacy Practices in Schools: Implications for Educational Policy and Practice* \$20,000.  
 • Social Sciences and Humanities Research Council of Canada  
 • (PI) Fazio, X., & (Co-PI) **Karrow, D.**
- Not Obtained*
- 2019 • *Creating and Sustaining a Research Community of Environmental and Sustainability Education in Teacher Education (ESE-TE): On Building a Stakeholder-focused Community of Research and Practice for Canadian ESE-TE* \$72,000.  
 • Banting Postdoctoral Fellowship  
 • Sperling, E. (applicant); **Karrow, D.** (supervisor)
- 2019 • *Open-air Centre for Design Thinking* \$3,087,083.  
 • Canadian Foundation for Innovation—Innovation Fund  
 • Harwood, D. (Team Leader A); **Karrow, D.** (Team Leader B)
- 2018 • *Developing Resources in Teacher Education for Climate Change* \$39,000.  
 • Royal Bank of Canada  
 • Inwood, H., (PI), Sperling, E. (Co-PI), DiGiuseppe, M. (C), Elliott, P. (C), **Karrow, D.** (C).
- 2018 • *Environmental and Sustainability Teacher Education Research Network* \$195,000.  
 • Social Sciences and Humanities Research Council Canada—Partnership Development Grant (SSHRC-PDG)  
 • **Karrow, D.** (Applicant and Project Director), Howard, P. (co-applicant), Gwekwerere, Y. (co-applicant), Vanwynsberghe, R. (co-applicant), Sauv , L. (collaborator), Miller, D. (collaborator), DiGiuseppe, M. (collaborator), Elliott, P. (collaborator), Inwood, H. (collaborator), Hopkins, C. (collaborator), Swartzberg, P. (collaborator)

- 2015 • *Developing Environmental Education in Canadian Faculties of Education* \$26,700.  
 • Social Sciences and Humanities Research Council of Canada Connection Grant  
 • (PI) Elliott, P., & (Co-PIs) **Karrow, D.** & DiGiuseppe, M.
- 2014 • *Promoting Intellectual Engagement in Science Classrooms: Connecting School Science to Local Communities*  
 • Social Sciences and Humanities Research Council of Canada, Insight Grant Proposal  
 • (PI) Fazio, X., (C) **Karrow, D.**
- 2013 • *Promoting Intellectual Engagement In Science Classrooms: Connecting School Science To Local Communities*  
 • Social Sciences and Humanities Research Council of Canada, Insight Grant Proposal  
 • (PI) Fazio, X., (C) **Karrow, D.**
- 2012 • *Promoting Intellectual Engagement in Science Classrooms: Connecting School Science to Local Communities*  
 • Social Sciences and Humanities Research Council of Canada, Insight Grant Proposal (ranked 4A)  
 • (PI) Fazio, X., (C) **Karrow, D.**
- 2008 • *Exploring Environmental Literacy in Schools: Implications for Education Policy and Practice* \$115,000.  
 • Social Sciences and Humanities Research Council of Canada  
 • (PI) Fazio, X., & (Co-PI) **Karrow, D.**

## (c) Consulting and contracts

- 2017 • Environmental Sustainability Research Centre (ESRC), transdisciplinary unit, Brock University, St. Catharines, ON. \$1165.00  
 • e-Campus Ontario curriculum development stipend.
- 2012 • Pearson Canada \$250.00  
 • review of book proposal: *When we teach science: Becoming an elementary science teacher.*  
 • **Karrow, D.**
- 2008 • Ministry of Education Ontario Grades 1-8: Science and Technology \$250.00  
 • **Karrow, D.**  
 • curriculum fact checker

- 2007- • A Collaborative Research Proposal for the \$11,000.  
2008 Ecological Monitoring and Assessment Network: EMAN,  
Brock University Faculty of Education, and the Hamilton  
Wentworth District School Board
- **(PI) Karrow, D.**, & (Co-PI) Fazio, X.
  - see note provided by Environment Canada

## 5. *Work in Progress*

### (a). Books

**Karrow, D.**, & Harvey, S. J. (to be submitted). *Educating as reclaiming mystery: An educational philosophy.*

**Karrow, D.** (to be submitted). *An eco-phenomenological journey: Beginning and ending in wonder.*

### (b). Chapters in Books

Harvey, S., Fleener, J., Yu, J., & **Karrow, D.** (accepted). *Fanning the flames of curriculum's desire through complicated conversations with Martin Heidegger.*

**Karrow, D.**, & Harvey, S. (accepted). *Educating as reclaiming mystery: An educational philosophy.*

Harvey, S. & **Karrow, D.** (accepted). *Curi-awe-sity: Resituating wonder's attributes in environmental education.*

### (c). Papers in Peer Refereed Journals

**Karrow, D.**, & Harvey, S. (submitted). *'Thalweg' of currents: 'Naturalist' environmental education.*

### (d). Papers to be Presented at Conferences or Learned Societies

*Accepted*

**Karrow, D.** *Canadian perspectives on environmental and sustainability education in teacher education: Establishing a research community.* Symposia chair for the SIG—Environmental Education, of the American Educational Research Association (AERA), San Francisco, CA., April 17-21, 2020.

DiGiuseppe, M., & **Karrow, D.** *Exploring how curriculum policy may enhance preservice environmental sustainability education globally: Emphasizing international research collaborations.* Paper submitted for review as part of a symposium for the SIG—Environmental Education, of the American Educational Research Association, San Francisco, CA., April 17-21, 2020.

Sperling, E., Hoeg, D., & **Karrow, D.** *Advancing a direction for environmental education: Assessing and addressing UNECE competences for teacher candidates.* Paper submitted for review as part of a symposium for the SIG—Environmental Education, of the American Educational Research Association, San Francisco, CA., April 17-21, 2020.

*Submitted*

**Karrow, D.**, & DiGiuseppe, M. *Environmental and sustainability education in teacher education: Canadian perspectives.* Symposium to be submitted for review with the SIG—Science Education Research Group (SERG), of the Canadian Association for Teacher Education (CATE), the Canadian Society for the Study of Education (CSSE), London, ON., June 1-5, 2020.

DiGiuseppe, M., & **Karrow, D.** *Exploring how curriculum policy may enhance preservice environmental sustainability education globally: Emphasizing international research collaborations.* Paper to be submitted for review as part of a symposium with the SIG—Science Education Research Group (SERG), of the Canadian Association for Teacher Education (CATE), the Canadian Society for the Study of Education (CSSE), London, ON., June 1-5, 2020.

DiGiuseppe, M., Kool, R., **Karrow, D.**, Donnell, A., Howard, P., Lin, E., McVitte, J., Sims, L., Sperling, E., & Vanwynsberghe, R. *Survey of environmental and sustainability education practices in Canadian faculties of education.* Paper to be submitted for review with the SIG--Science Education Research Group (SERG), of the Canadian Association for Teacher Education (CATE), Canadian Society for Studies in Education (CSSE), London, ON., June 1-5, 2020.

Docherty-Skippen, S., **Karrow, D.**, Ahmed, G. *Pre-service teachers' attitudes toward teaching science and technology.* Paper to be submitted for review with the Science Education Research Group (SERG) SIG of the Canadian Association for Teacher Education (CATE) of the Canadian Society for Studies in Education (CSSE), London, ON., June 1-5, 2020.

**Karrow, D., & Harvey, S.** *Teaching as reclaiming mystery: An educational philosophy.* Paper to be submitted for review with the SIG—Canadian Philosophy of Education Society (CPES), of the Canadian Association of Foundations of Education (CAFÉ), of the Canadian Society for Studies in Education (CSSE), London, ON., June 1-5, 2020.

*To Be Submitted*

(e). Research

DiGiuseppe, M., Kool, R., **Karrow, D.**, Donnell, A., Howard, P., Lin, E., McVittee, J., Sims, L., Sperling, E., & Vanwynsberghe, R. Survey of environmental and sustainability education practices in Canadian faculties of education.

## E. Teaching and Learning Activities

1. *Courses Taught* Teacher Education =  Graduate =

Year	Courses Taught (x) = # of sections taught (OL) = overload	# Students
2018-19	Sabbatical Leave	
2017-18	<i>EDBE 8P37 Primary-Junior Elementary Science (2)</i>	40
	<i>EDUC 8Y15 Outdoor/Environmental Education (1) (10 Pts. OL)</i>	18
	<i>EDUC 7P69 Research Proposal Colloquium (2)</i>	19
2016-17	<i>EDBE 8P37 Primary-Junior Elementary Science (2)</i>	46
	<i>EDBE 8Y43 Primary-Junior-Intermediate Teaching, Learning, and Research (3) (10 Pts. OL)</i>	86
	<i>EDUC 5P44 Curriculum Design, Implementation, and Evaluation</i>	13
2015-16	<i>EDBE 8P37 Primary-Junior Elementary Science (2)</i>	45
	<i>EDUC 7P69 Research Proposal Colloquium</i>	7
2014-15	<i>EDUC 8Y27 Junior-Intermediate Science Methods (3)</i>	88
	<i>EDUC 8Y37 Primary-Junior Science Methods (3)</i>	104
	<i>EDUC 7P69 Research Proposal Colloquium</i>	10
2013-14	<i>EDUC 8Y27 Junior-Intermediate Science Methods (2)</i>	70
	<i>EDUC 8Y37 Primary-Junior Science Methods (2)</i>	60
	<i>EDUC 5Q97 Culminating Seminar (20 Pts. OL)</i>	10
	<i>EDUC 5P54 Designing Curriculum to Develop Thinking Skills</i>	9
2012-13	<i>EDUC 8Y27 Junior-Intermediate Science Methods (3)</i>	75
	<i>EDUC 8Y37 Primary-Junior Science Methods (2)</i>	62

	<i>EDUC 5P92 Introduction to Education Research Methods</i>	5
2011-12	Sabbatical Leave	
2010-11	<i>EDUC 8Y27 Junior-Intermediate Science Methods (3)</i>	75
	<i>EDUC 8Y37 Primary-Junior Science Methods (4)</i>	132
	<i>EDUC 5P44 Curriculum Design, Implementation, and Evaluation (20 Pts. OL)</i>	18
	<i>EDUC 5P92 Introduction to Education Research Methods (20 Pts. OL)</i>	16
2009-10	<i>EDUC 8Y27 Junior-Intermediate Science Methods (2)</i>	54
	<i>EDUC 8Y15 Outdoor/Environmental Education (10 Pts. OL)</i>	10
	<i>EDUC 8D09 Principles/Practices for Professional Certification</i>	32
	<i>EDUC 7P69 Research Proposal Colloquium</i>	7
2008-09	<i>EDUC 8Y27 Junior-Intermediate Science Methods (2)</i>	44
	<i>EDUC 5P92 Introduction to Education Research Methods</i>	6
	<i>EDUC 8D09 Principles/Practices for Professional Certification</i>	33
2007-08	<i>EDUC 8Y27 Junior-Intermediate Science Methods (3)</i>	55
	<i>EDUC 8Y15 Outdoor/Environmental Education</i>	9
	<i>EDUC 8D09 Principles/Practices for Professional Certification</i>	30
2006-07	<i>EDUC 8Y27 Junior-Intermediate Science Methods (3)</i>	63
	<i>EDUC 8Y15 Outdoor/Environmental Education</i>	9
	<i>EDUC 8D09 Principles/Practices for Professional Certification</i>	24
2005-06	<i>EDUC 8Y27 Junior-Intermediate Science Methods (5)</i>	130
	<i>EDUC 8Y15 Outdoor/Environmental Education</i>	6
	<i>EDUC 8D09 Principles/Practices for Professional Certification</i>	24

## 2. Graduate and undergraduate student supervision:

Masters' Advisement: thesis = (T); major research paper = (MRP)

<b>Student Name</b>	<b>Research Topic</b>	<b>Started</b>	<b>Completed</b>	<b>Status</b>	<b>Supervisory Capacity</b>
John Gadoua (MEd)	(T) Second Career Males and Preservice Teacher Preparation	2006	December 2008	PT	Committee member
Debra Schrader (MEd)	(MRP) Place-based Learning in Undergraduate	2008	August 2009	FT	Supervisor

	Education				
Gail Lafleur (PhD)	(T) Cultural Intelligence for Peace	2004	December 2013	PT	Committee member
Laura Perri (MEd)	(T) Exploring Capacity Building in Ontario Hygiene Educators during National Curriculum Reform	2010	October 2015	PT	Committee member
Melissa Fernandes (MEd)	(MRP) Sojourning for Best Practice: Enriching and Transforming Teaching Pedagogy Through International Service Learning	2016	June 2016	PT	2 <sup>nd</sup> Reader
Allison Dow (MEd)	(T) Exploring the Current State of Grades 4-8 Science Education in Ontario	2014	July 2015	FT	Committee member
Rachel Brodie (MEd)	(T) Examples of Secondary School Teachers, Students, and Administrators in One Exemplary <i>Ecoschool</i>	2015	April 2017	FT	Committee member
Bo Daniels (MEd)	(T) E-learning and the Classroom	2016	September 2017	FT	Committee member
Boguslawa Gatarek (PhD)	(T) Animals Are Us: Applying the Common In-Group Identity Model to Humane Education	2010	April 2018	FT	Committee member
Fouada Hazema (PhD)	(T) From Generalist to Specialist: Transforming Teachers to Improve Elementary Science Instruction Through Inquiry	2015	In-progress	PT	Committee member
Aman Toor (PhD)	(T) Intermediate Mathematics Teachers' Experiences of Teachable Moments	2015	In-progress	FT	Committee member

Ryan Kasperowitsch (PhD)	Outdoor and Experiential Education	2017	In-progress	FT	Supervisor
Holly Tsun-Haggarty (PhD)	Comparing Arts-based Methodologies	2016	In-progress	FT	Committee member
Karolina Walczyk (MEd)	(MRP) Body Mapping: Adolescents' Understanding of the Environment	2016	In-progress	FT	2 <sup>nd</sup> Reader
Tracey Gurbini (PhD)	Technology Education	2014	In-progress	FT	Committee member
Ziad Dabaja (PhD)	Forest Schools	2017	In-progress	FT	Committee member

### 3. Contributions to seminars and colloquia relevant to teaching and learning

#### (a) Within Brock University

**Karrow, D.** (November, 2010). *Imagination as a Higher Order Thinking Capacity*. EDUC P401, Undergraduate course lecture. Graduate/Undergraduate Department of the Faculty of Education, Brock University. St. Catharines, ON.

**Karrow, D.** (November, 2009). *Thinking and Learning from a Phenomenological Perspective*. EDUC 8P30 Graduate course lecture. Graduate/Undergraduate Department of the Faculty of Education, Brock University, St. Catharines, ON.

**Karrow, D.** (September, 2009). *Conceptions of Place and Place-based Education: Exploring the Terrain*. Poster presented to the Faculty Board of the Faculty of Education, Brock University, St. Catharines, ON.

**Karrow, D., Fazio, X., Daniels, C. & Andrachuk, H.** (January, 2009). *Rewards and Challenges of Complex Research Partnerships: Piloting NatureWatch within an Elementary School*. Presentation to the Research Colloquium, of the Faculty of Education, Brock University. St. Catharines, ON.

**Karrow, D., & Fazio, X.** (January, 2008). *Environmental Education at a Crossroads: Engaging Children with Nature through NatureWatch*. Presentation to the Faculty Board, of the Faculty of Education, Brock University, St. Catharines, ON.

**Karrow, D.** (November, 2007). *Environmental Education as Transformative Education EDUC 5P01: Innovative Curriculum*, Graduate Course Graduate/Undergraduate Department, Faculty of Education, Brock University, St. Catharines, ON.

**Karrow, D.** (September/November, 2007). *Integrating Science with Physical Education EDUC 8Y36*, Pre-service Methods Course Faculty of Education, Brock University, Hamilton, ON.

**Karrow, D.** (November, 2007). *Place and Being: Metaphysics beyond Technicity EDUC 5P35: Adult Teaching and Learning* Graduate/Undergraduate Department, Faculty of Education, Brock University, Hamilton, November 2007.

**Karrow, D.** (November, 2007). *Place and Being: Metaphysics beyond Technicity EDUC 5P27: Introduction to Integrated Studies* and *EDUC 5P36: Critical Perspectives on Adult Education*, Graduate Courses Graduate/Undergraduate Department, Faculty of Education, Brock University, Sheridan/Oakville Campus, Burlington, ON.

(b) Outside Brock

**Karrow, D.** (January, 2007). *The Poetics of Ritual AEC 1275H* Graduate Course Lecture The Ontario Institute for Studies in Education of the University of Toronto, ON.

**Karrow, D.** (February, 2004). *The Nature of Science and Science Education* Science Education Seminar University of Toronto at Mississauga, Toronto, ON.

**Karrow, D.** (February, 2004). *Place-based Science Education: The Keystone Science School* Science Education Seminar University of Toronto at Mississauga, Toronto, ON.

**4. Recognition of Teaching Excellence, including Awards (e.g., a Faculty Teaching Award or the OCUFA award)**

1999 Teaching for Excellence

Presented by the Bluewater District School Board, Chesley, ON.

**5. Other Contributions Devoted to Pedagogical Interest, including innovative methods in teaching and other contributions to the teaching activities of the University (Publications or Activities previously listed in Section D may be cross listed here and identified with an asterisk.)**

(a). Course and Curriculum Development

- e-Campus Ontario Open Content Project *Environmental Sustainability in Practice: Education Module*, Environmental Sustainability Research Centre (ESRC) transdisciplinary research unit, Brock University, 2017.

- *EDBE 8P37 Primary-Junior Science Education*, Department of Teacher Education, Faculty of Education, Brock University, 2015.
- *EDBE 8Y43 Teaching, Research, and Educational Inquiry*, Department of Teacher Education, Faculty of Education, Brock University, 2015.
- *EDUC 7P69 Research Proposal Colloquium*, Graduate/Undergraduate Department, Faculty of Education, Brock University, 2015.
- *EDUC 5P54 Curriculum Design to Develop Thinking Abilities*, Graduate/Undergraduate, Department, Faculty of Education, Brock University, 2014.
- *EDUC 5Q97 Culminating Seminar*, Graduate/Undergraduate Department, Faculty of Education, Brock University, 2014.
- *EDUC 8Y37 Elementary Science Education: Primary-Junior*, Department of Teacher Education, Faculty of Education, Brock University, 2014.
- *EDUC 8Y27 Elementary Science Education: Junior-Intermediate*, Department of Teacher Education, Faculty of Education, Brock University, 2014.
- *EDUC 5P44 Curriculum Design, Implementation and Evaluation*, Graduate/Undergraduate Department, Faculty of Education, Brock University, 2011.
- *EDUC 8Y37 Primary-Junior Science Methods*, Department of Teacher Education, Faculty of Education, Brock University, 2010-11.
- *EDUC 8D09 Principles and Practices for Professional Certification (P/J/I)*, Department of Teacher Education, Faculty of Education, Brock University, 2010.
- *EDUC 7P69 Research Proposal Colloquium*, Joint Ph.D. Program, Faculty of Education, Brock University, 2010 and 2011
- *EDUC 5P92 Introduction to Research Methods*, Graduate/Undergraduate Department, Faculty of Education, Brock University, 2008
- *EDUC 8Y15 Outdoor/Environmental Education*, Department of Teacher Education, Faculty of Education, Brock University, 2005-present.
- *EDUC 8Y27 Junior-Intermediate Science Methods*, Department of Teacher Education, Faculty of Education, Brock University, 2004-present.
- *Science Education Seminar*, Astronomy Department, Faculty of Science, University of Toronto, Mississauga, 2003.

(b) Publications

- \* **Karrow, D.** (April, 2009). *Engaging the pre-theoretical through place-based education: A foundation for environmental/science education*. Paper presented at the National Association for Research in Science Teaching (NARST), Garden Grove, CA
- \* **Karrow, D., & Fazio, X.** (May, 2008). Ministry of Education Forum *Preparing Ontario's Teachers for the Challenge Ahead: Environmental Education Success Stories from Brock University*. Ministry of Education Forum, OISE/University of Toronto, ON.
- \* **Karrow, D.** (April, 2007). Metaphysics and Physis: An alternate disposition for the teaching and learning relationship in science education. *Proceedings of the National Association for Research in Science Teaching (NARST)*, New Orleans, LA, 1124-1158.
- \* **Karrow, D. & Kentel, J. A.** (May, 2007). *Re-conceptualizing teacher education through the nuance of mystery and the body*. Paper presented at the meeting of the Canadian Association of Teacher Education (CATE) of the Canadian Society of Studies in Education (CSSE), Saskatoon, SK.
- \* **Karrow, D. & Kentel, J. A.** (July, 2005). Educated myopia: Permeating the boundaries of the pre-service teacher-training model [Abstract]. *Proceedings of the Imaginative Education Research Group (IERG) Conference*, Available from: [http://www3.educ.sfu.ca/conferences/ierg2005/papers/062-Karrow\\_Kentel.pdf](http://www3.educ.sfu.ca/conferences/ierg2005/papers/062-Karrow_Kentel.pdf). Vancouver, BC.

(c) Student Research Assistantship Training

- Susan Docherty-Skippen, Winter 2019
- Susan Docherty-Skippen, Winter 2018
- Susan Docherty-Skippen, Fall 2017
- Susan Docherty-Skippen, Winter 2017
- Tyler Marr, Winter 2015
- Tyler Marr, Fall 2014
- Claire Dusto, Spring 2012
- Vanessa Sperduti, Winter 2012
- Kathryn Lang 2010-2011

- James Borland 2009-2010
- Deb Schrader 2008-2009
- Linda Thomas 2007-2009
- Terri Payk 2006-2007

**6. *Written comments of colleagues who have observed the candidate's teaching first hand and at the invitation of the candidate.***

**7. *Written comments provided by colleagues regarding the candidate's reputation in the area of teaching and learning among peers and the basis for that reputation.***

**8. *Written comments of students about the candidate's teaching.***

**9. *Additional material relevant to teaching and learning collected by the candidate on their own initiative (e.g., a teaching portfolio).***

**10. *Supervision of student practica and/or internships where specific professional credentials are required of the supervisor to allow students to obtain certification or licensure.***

Year	# of Students/Cohort Group	Number of Students Counseled/Supervised During Practica		
		Block 1	Block 2a	Block 2b
2004-05	25	10	10	10
2005-06	27	5	6	6
2006-07	28	5	9	6
2007-08	30	12	9	9
2008-09	32	9	12	0
2009-10	32	8	8	8

## **F. University and Community Service**

### **1. *Within Brock University***

#### **(a). Committee Responsibilities**

- Participating faculty member on the Environmental Sustainability Research Centre (ESRC), 2016-present.

-- participant of the ESRC Networking Session, November 2016.

- Chair of the Elementary Science Instructional Team, Department of Teacher Education, Faculty of Education, 2013-2018.
- Committee member of the Joint PhD Implementation Committee, Faculty Board, Faculty of Education, 2015-present.
  - panel facilitator for PhD Meet and Greet, October 2017.
- Committee member of the Faculty of Education Planning and Priorities Committee, 2015-2018.
- Chair of the Ad Hoc Committee on Enhancing Environmental Education in the Department of Teacher Education, 2015-present.
- Committee member of the Department of Teacher Education Committee, Faculty of Education, 2012-present.
- Committee member of the Faculty of Education Restructuring Committee, Faculty Board, 2015-2017.
- Committee member of the Bermuda Teacher Certification Committee, Department of Teacher Education, 2015-2016.
- Committee member of the Department of Teacher Education Ad Hoc Admission's Review Committee, 2015-2017.
- Chair of the Graduate Program in Teacher Education (GPTE) Committee, Department of Teacher Education, 2012-2014.
- Committee member of the Faculty of Education Tenure and Promotion Committee, Faculty of Education, 2012-2014
- Chair of the Graduate Program in Teacher Education (GPTE) Committee, Department of Teacher Education, 2011-2012.
- Committee member of the Science Instructional Team, Department of Teacher Education, Faculty of Education, 2012-2013.
- Faculty of Education representative to establish a university-wide interdisciplinary institute for research and teaching on the environment at Brock University, 2011-2012.
- Committee member of the Graduate Program in Teacher Education (GPTE) Committee, 2010-2011.
- Chair of Research and Development Committee, Faculty of Education, Brock University, 2010-2011.

- Department of Teacher Education Committee full time member, Faculty of Education, Brock University, 2010-2011.
- Faculty Advisors' Committee member, Faculty of Education, Brock University, 2004-2010.
- Instructional Team Leaders' Committee member, Faculty of Education, Brock University, 2009-2010.
- Chair of Elementary Science Instructional Team, Teacher Education Department, Faculty of Education, 2010-2011.
- Cohort Generic Course Outline Subcommittee member, Faculty of Education, Brock University, 2010.
- Joint Ph.D Implementation Committee member, Faculty of Education, Brock University, 2009-2012
- Chair/Initiator of the Scholarly Learning Community—Project (SLC-P) *The Research Unit for Global Education* (RUGE), 2007-2009.
- Research and Development Committee member, Faculty of Education, 2005-2011.
- Research Colloquium Committee, Teacher Education Department representative, Faculty of Education, 2007-2010.
- Teacher Education Department Awards Committee member, Faculty of Education, 2007-2010.
- Chair of the Committee on Re-imagining the Faculty of Education (formerly, Option 6b) of the Faculty of Education, Brock University, 2008.
- Graduate Fellowship Committee, Teacher Education Department representative, Faculty of Education, 2007.
- Chair of Environmental Education Ad Hoc Committee, Teacher Education Department, Faculty of Education, Brock University, 2007-2009.
- Chair of Science Instructional Team, Teacher Education Department, Faculty of Education, 2005-2008.
- Chair/Initiator of the Scholarly Learning Community—Initiation (SLC-I) *Environmental Education*, 2005-2006.

## (b). Participation in Professional Development Activities

- participant in North American Association for Environmental Education webinar: *Mainstreaming Environmental and Sustainability Education in Teacher Education*. May 16, 2019.
- participant in SSHRC—PDG application workshop. June 18, 2018.
- participant in SSHRC—PDG application workshop. July 19, 2019.

**2. Outside Brock University**

## (a). Guest Lecturer

**Karrow, D.** (December, 2011). *Reclaiming Mystery: A Predisposition to Socio-Ecological Consciousness*. Department of Theory and Policy Studies, Faculty of Education, The Ontario Institute for Studies in Education of the University of Toronto (OISE/UT).

**Karrow, D.** (June, 2009). *The Climate Project (TCP)*  
Egremont Community School, Holstein, ON.

**Karrow, D.** (May, 2009). *The Climate Project (TCP)*  
Lester B. Pearson Secondary School, Burlington, ON.

## (b) Keynote Addresses

**Karrow, D.** (February, 1999). *Environmental Education and The Keystone Science School*, Bluewater District School Board, Chesley, Ontario

**Karrow, D.** (March, 1999). *Environmental Education and The Keystone Science School*, Grey Association for Better Planning, Markdale, ON.

**3. Counseling Students**

One unique aspect of the Department of Teacher Education is its Cohort model (formerly referred to as *Counseling Group*). Although the name has changed the model retains its operating premise. In addition to instructional responsibilities faculty act as *counselors* throughout the eight-month certification process. From time to time, candidates present with various exceptionalities i.e., depression, anxiety, drug abuse, learning disabilities, or are involved in incidents of harassment (one candidate was involved in two incidents of sexual harassment within a school). Since my appointment I have had to work extensively with ten teacher candidates presenting with any one or more of these exceptionalities. They require extensive support and guidance prior to, during, and following a referral to an appropriate body, i.e., Student Services.

#### 4. *Other Scholarly and Professional Academic Activity*

##### (a). Memberships in Scholarly/Professional Societies/Associations

- *Co-chair of the EECOM Standing Committee on Environmental Sustainability Education in Teacher Education, 2017-present.*
- *Co-chair of the Research Symposium for EECOM's annual conference, York University, fall 2020, 2018-present.*
- *Canadian Network of Environmental Education and Communication (EECOM), general member, 2008-present.*
- *International Human Science Research Conference (IHSRC), general member.*
- *Curriculum and Pedagogy Association, general member.*
- *Canadian Association for Teacher Education (CATE), general member and guest editor.*
- *Canadian Association for Curriculum Studies (CACS), general member.*
- *American Education Research Association (AERA), general member of the Environmental/Ecological Education SIG and Division B: Curriculum Studies.*
- *North American Association for Environmental Education (NAAEE), general member.*
- *Ontario Society of Environmental Education (OSEE), general member.*
- *Science Teachers' Association of Ontario (STAO), general member.*
- *National Association of Research in Science Teaching (NARST), general member of the Environmental Education SIG.*
- *Imaginative Education Research Group (IERG), general member.*
- *Canadian Society for Studies in Education (CSSE), general member.*
- *The Society for Existential and Phenomenological Theory and Culture (EPTC), general member, conference commentators.*
- *The Interdisciplinary Coalition of North American Phenomenologists (ICNAP), general member, conference attendee.*

(b) Scholarly Contributions to Associations

- Chair of the symposium session *Is Another Mathematics Possible? Mathematics and the living world*. American Educational Research Association (AERA), April 2019, Toronto, ON.
- Chair of the session *Consumerism*. The Canadian Association of Foundations in Education (CAFÉ), May 2012, Waterloo, ON.
- Chair of the session *Environmental Education Research and De-colonizing Indigenizing, Empowering and De-territorializing*, Ecological and Environmental Special Interest Group, a SIG of the American Educational Research Association (AERA), April 2009, San Diego, CA.
- Discussant for the session *Science Teacher Education*, Science Education Research Group (SERG), A SIG of the Canadian Association for Curriculum Studies (CACS) of the Canadian Society for Studies in Education (CSSE), May 2008, Vancouver, BC.