

## CURRICULUM VITAE

### **Dr. Julie Loisel**

Department of Geography, Texas A&M University  
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<http://www.julieloisel.com> (website)

### **Education**

- 2012     **Ph.D. in Earth and Environmental Sciences, Lehigh University, USA**  
*Autogenic and allogenic controls on carbon dynamics in peatlands from Alaska and Patagonia*  
Committee: Zicheng Yu (advisor), Robert Booth, Frank Pazzaglia, Nigel Roulet
- 2008     **M.Sc. in Physical Geography, Université du Québec - Montréal, Canada**  
*Late-Holocene paleoecological reconstruction from two peatlands, James Bay Lowlands*  
Committee: Michelle Garneau (advisor), Benoit St-Onge, Pierre Richard, Ed Mitchell
- 2006     **B.Sc. in Physical Geography, Université du Québec - Montréal, Canada**

### **Academic Appointments**

- 2017-     **Assistant Professor**  
Department of Geography, Texas A&M University
- 2015, 16   **Visiting Assistant Professor**  
Department of Geography, Texas A&M University

### **Post-Doctoral Research Scholar**

- 2014, 15   **Southwest climate change and its impacts on terrestrial ecosystems.**  
Mentor: Glen MacDonald (University of California – Los Angeles, USA). US-DOI.
- 2013, 14   **Carbon accumulation in moss banks of the Antarctic Peninsula.**  
Mentor: Zicheng Yu (Lehigh University, USA). NSF.
- 2012, 13   **Sensitivity of circum-arctic peatland carbon to Holocene warm climates.**  
Mentor: Zicheng Yu (Lehigh University, USA). NSF.

### **Teaching Experience**

#### **Assistant Professor**

- 2015-17    **Planet Earth (GEOG203)**  
Department of Geography, Texas A&M University  
\*\*\* *in-class, online, and hybrid formats* \*\*\*

- 2017 **Field Geography** (GEOG450) – leader of a study abroad trip to Peru  
Department of Geography, Texas A&M University
- 2017 **Workshop in Environmental Studies** (GEOG380)  
Department of Geography, Texas A&M University
- 2017 **Science and Politics of Climate Change** (GEOS444)  
Department of Geography, Texas A&M University
- 2016 **Introduction to Geosciences, Freshmen Seminar** (GEOS101)  
Department of Geography, Texas A&M University

*Adjunct Faculty (during my PhD and Post-Doc)*

- 2014 **Science of Environmental Issues – Energy and the Environment** (EES004)  
Department of Earth & Environmental Sciences, Lehigh University
- 2013 **Science of Environmental Issues – System complexity & Chaos** (EES004)  
Department of Earth & Environmental Sciences, Lehigh University
- 2011 **Terrestrial Ecosystem Ecology** (EES250)  
Department of Earth & Environmental Sciences, Lehigh University

*Teaching Assistant*

- 2011 **Field Camp, Geology and the Environment** (EES341)  
Department of Earth & Environmental Sciences, Lehigh University
- 2009, 10 **Terrestrial Ecosystem Ecology** (EES250)  
Department of Earth & Environmental Sciences, Lehigh University
- 2008 **Lab. Methods in Physical Geography** (GEO5032)  
Département de Géographie, Université du Québec – Montréal
- 2006, 07 **Field Camp, Ecosystem Dynamics** (GEO3082)  
Département de Géographie, Université du Québec – Montréal
- 2004-06 **Climatology** (GEO1062)  
Département de Géographie, Université du Québec – Montréal
- 2005, 06 **Biogeography** (GEO2082)  
Département de Géographie, Université du Québec – Montréal
- 2005 **Hydroclimatology** (GEO3061)  
Département de Géographie, Université du Québec – Montréal

### Student mentoring

As a research mentor, my work includes lab and field training, supervising research grant proposal writing and thesis or report redaction, as well as preparing students for presentations.

- 2016-17 Supervisor of 10-20 undergraduate students working in my laboratory every semester. Texas A&M University (GEOG491 – research credits).
- 2017,18 Undergraduate thesis supervisor for students Caralie Brewer and Alexis Lemos. Texas A&M University.
- 2016,17 Undergraduate thesis supervisor for students Kate Von Ness and Collin Kohlmeyer. Texas A&M University.  
*\*\*\* Kate's thesis won the prize for best STEM thesis across the University \*\*\**
- 2016 Host supervisor of Ph.D. student and NSERC fellow Daniel Karran for 4 months. Texas A&M University.
- 2010, 11 Undergraduate thesis supervisor for student Greg Sills. Lehigh University.
- 2007, 08 Undergraduate thesis supervisor for student Claire Lacroix. Université du Québec – Montréal.

### Research Experience

#### Visiting Scholar

- 2014 **Lignin, phenols, carbohydrates, and amino acid extraction and analysis of peat.**  
Collaborator and host: Karl Kaiser (Texas A&M University – Galveston)
- 2012 **Modeling non-linear ecosystem shifts**  
Mentor and host: Paolo D'Odorico (University of Virginia, USA)
- 2011 **Cellulose extraction and isotopic analysis (C,H,O) of *Sphagnum* moss**  
Mentors and hosts: Tim Daley and Neil Loader (Swansea University, Wales)
- 2007 **Peat humification analysis**  
Mentor and host: Frank Chambers (University of Gloucestershire, England)
- 2005 **Pollen analysis**  
Mentor and host: Pierre Richard (Université de Montréal, Canada)

## **Peer-Reviewed Publications**

### **Submitted articles**

**Loisel J**, MacDonald GM, Thomson M. In Review. The “warm Little Ice Age” as an analogue for enhanced hydroclimatic variance across the American Southwest. *PLoS One*.

**Loisel J**, Yu Z, Beilman DW, Kaiser K, Parnikoza I. In Review. Past and present peatland development in Antarctica under warm climates. *Nature Scientific Reports*.

Beilman DW, Yumol L, Yu Z, Parnikoza I, Guilderson TP, **Loisel J**. In Review. Recent plant growth conditions in the Antarctic Peninsula in context of the last 2000 years. *Science*.

Stelling J, Yu Z, Beilman DW, **Loisel J**. In Review. Dynamic response of moss peatbank ecosystems to late Holocene hydroclimate change in the western Antarctic Peninsula. *Quaternary Science Reviews*.

Harden J, Hugelius G, Ahlström A, Blankinship J, Bond-Lamberty B, Lawrence C, **Loisel J**, Malhotra A, Jackson R, Ogle S, Phillips C, Ryals R, Todd-Brown K, Vargas R, Vargas S, Cotrufo F, Keiluweit M, Heckman K, Crow S, Silver W, DeLonge M, Nave L. In Review. Pathways for the science community to characterize the state, vulnerabilities, and management opportunities of soil organic matter. *Global Change Biology*.

Treat C, Broothaerts N, Dalton A, Dommain R, Douglas T, Drexler J, Finkelstein S, Grosse G, Hope G, Hutchings J, Jones M, Kleinen T, Kuhry P, Lacourse T, Lähteenoja O, **Loisel J**, Notebaert B, Payne R, Peteet D, Sannel B, Stelling J, Strauss J, Swindles G, Talbot J, Tarnocai C, Verstraeten G, Williams C, Xia Z, Yu Z, Brovkin V. In Review. Widespread global peatland establishment and persistence for the last 130,000 years. *Nature Geoscience*.

### **Published Peer-Reviewed Book Chapters (invited)**

**Loisel J**. 2015. Peatlands as carbon sinks / *Las turberas como sumideros de carbono*, Chapter 11 p. 297-315. In: E Domínguez and D Vega-Valdés (eds.). *Funciones y servicios ecosistémicos de las turberas en Magallanes*. INIA N° 33. Punta Arenas, Chile. 334 pp.

### **Published articles**

**Loisel J**, Malhotra A, Phillips C. 2017. Building an interdisciplinary platform for soil carbon and soil health science, management, and education. *Eos Magazine*, American Geophysical Union (AGU).

**Loisel J**, van Bellen S, Pelletier L, Talbot J, Hugelius G, Karran D, Yu Z, Nichols J, Holmquist J. 2016. Insights and issues with estimating northern peatland carbon stocks and fluxes since the Last Glacial Maximum. Invited review. *Earth Science Reviews*, doi: 10.1016/j.earscirev.2016.12.001.

Yu Z, Beilman DW, **Loisel J**. 2016. Transformations of landscape and peat-forming ecosystems responding to late Holocene climate change in the western Antarctic Peninsula. *Geophysical Research Letters*. 43. doi: 10.1002/2016GL069380.

Treat CC, Jones MC, Camill P, Garneau M, Gallego-Sala A, Harden JW, Hugelius G, Klein ES, Kokfelt U, Kuhry P, **Loisel J**, Mathijssen PJH, O'Donnell JA, Oksanen PO, Ronkainen TM, Sannel ABK, Talbot J, Tarnocai CM, Väliranta M. 2015. Effects of permafrost aggradation on peat properties as determined from a pan-arctic synthesis of plant macrofossils. *Journal of Geophysical Research – Biogeosciences*. 121(1): 78-94. doi:10.1002/2015JG003061.

**Loisel J**, Yu Z, Beilman DW, Camill P, Alm J, Amesbury MJ, Anderson D, Andersson S, Bochicchio C, Barber K, Belyea LR, Bunbury J, Chambers FM, Charman DJ, De Vleeschouwer F, Fiałkiewicz-Kozieł B, Finkelstein SA, Gałka M, Garneau M, Hammarlund D, Hinchcliffe W, Holmquist J, Hughes P, Jones MC, Klein ES, Kokfelt U, Korhola A, Kuhry P, Lamarre A, Lamentowicz M, Large D, Lavoie M, MacDonald G, Magnan G, Mäkilä M, Mallon G, Mathijssen P, Mauquoy D, McCarroll J, Moore TR, Nichols J, O'Reilly B, Oksanen P, Packalen M, Peteet D, Richard PJH, Robinson S, Ronkainen T, Rundgren M, Sannel ABK, Tarnocai C, Thom T, Tuittila E-S, Turetsky M, Väliranta M, van der Linden M, van Geel B, van Bellen S, Vitt D, Zhao Y, Zhou W. 2014. A database and synthesis of northern peatland soil properties and Holocene carbon and nitrogen accumulation. *The Holocene* 24(9), 1028-42.

Yu Z, **Loisel J**, Charman DJ, Beilman DW, Camill P. 2014. Holocene peatland carbon dynamics in the circum-Arctic region: an Introduction. *The Holocene* 24(9), 1021-27.

**Loisel J**, Yu Z, Charman D. 2014. A synthesis of northern peatland carbon accumulation history. *Quaternary Perspectives Magazine*, International Quaternary Association (INQUA).

Yu Z, **Loisel J**. 2014. Holocene circum-Arctic peatland carbon dynamics. *PAGES News Letter*, Past Global Changes (PAGES), 22(1): 41.

**Loisel J**, Yu Z. 2013. Surface vegetation patterning controls carbon accumulation in peatlands. *Geophysical Research Letters*, 40: 1-6, doi:10.1002/grl.50744.

**Loisel J**, Yu Z. 2013. Holocene peatland carbon dynamics in Patagonia. *Quaternary Science Reviews*, 69: 125-141.

**Loisel J**, Yu Z, Parsekian A, Nolan J, Slater L. 2013. Quantifying landscape morphology influence on peatland lateral expansion using ground penetrating radar (GPR) and peat core analysis. *Journal of Geophysical Research – Biogeosciences*, 118, 10.1002/jgrg20029.

Yu Z, **Loisel J**, Turetsky MR, Cai S, Zhao Y, Frohling S, MacDonald GM, Bubier JL. 2013. Evidence for elevated emissions from high-latitude wetlands causing high atmospheric CH<sub>4</sub> concentration in the early Holocene. *Global Biogeochemical Cycles*, 27, 10.1002/gbc20025.

**Loisel J**, Yu Z. 2013. Recent acceleration of carbon accumulation in a boreal peatland, south-central Alaska. *Journal of Geophysical Research – Biogeosciences*, 118, 10.1029/2012jg001978.

Charman D, Beilman D, Blaauw M, Booth RK, Brewer S, Chambers F, Christen JA, Gallego-Sala AV, Harrison SP, Hughes PDM, Jackson S, Korhola A, Mauquoy D, Mitchell F, Prentice IC, van der Linden M, De Vleeschouwer F, Yu Z, Alm J, Bauer IE, McCorish Y, Garneau M, Hohl V, Huang Y, Karofeld E, Le Roux G, **Loisel J**, Moschen R, Nichols JE, Nieminen TM, MacDonald GM, Phadtare NR, Rausch N, Sillasoo Ü, Swindles GT, Tuittila E-S, Ukonmaanaho L, Väliranta M, van Bellen S, van Geel B, Vitt D, Zhao Y. 2013. Climate-related changes in peatland carbon accumulation during the last millennium. *Biogeosciences*, 10, 929-944, 10.5194/bg-10-929-2013.

**Loisel J**, Gallego-Sala AV, Yu Z. 2012. Global-scale pattern of peatland *Sphagnum* growth driven by photosynthetically active radiation and growing season length. *Biogeosciences*, 9: 2737-2746.

Yu Z, **Loisel J**, Brosseau D, Beilman D, Hunt S. 2010. Global peatland dynamics since the Last Glacial Maximum. *Geophysical Research Letters* 37, L13402, 10.1029/2010GL043584.  
\*\*\*Research spotlight article in EOS\*\*\*

**Loisel J**, Garneau M. 2010. Late-Holocene paleoecohydrology and carbon accumulation estimates from two boreal peat bogs in eastern Canada: potential and limits of multi-proxy analyses. *Palaeogeography, Palaeoclimatology, Palaeoecology* 291:493-533.

**Loisel J**, Garneau M, Hélie J-F. 2010. *Sphagnum*  $\delta^{13}\text{C}$  values as indicators of paleohydrological changes in a peat bog. *The Holocene* 20(2): 285-291.

**Loisel J**, Garneau M, Hélie J-F. 2009. Modern *Sphagnum*  $\delta^{13}\text{C}$  signatures follow a surface- moisture gradient in two boreal peat bogs, James Bay lowlands, Québec. *J of Quaternary Science* 24(3): 209-214.

Ali AA, Ghaleb B, Garneau M, Asnong H, **Loisel J**. 2008. Recent peat accumulation rates in minerotrophic peatlands of Bay James region, Eastern Canada, inferred by  $^{210}\text{Pb}$  and  $^{137}\text{Cs}$  radiometric techniques. *Applied Radiation and Isotopes* 66: 1350-1358.

### **Most Relevant Conferences and Seminar Presentations (1<sup>st</sup> author only)**

#### Invited Presentations

**Loisel, J.** 2015. A bipolar perspective on Holocene carbon accumulation in peatlands. Invited oral presentation, *Department of Geography, Texas A&M University, College Station, USA.*

**Loisel J.** 2015. Modern *Sphagnum* growth driven by photosynthetically active radiation and growing season length: implications for Holocene carbon sequestration in peatlands. Invited oral presentation, *Botanical Society of America Annual Meeting, Edmonton, Canada.*

**Loisel J.** 2014. Peatland dynamics during warm climate intervals. Invited oral presentation, *Department of Biology, Villanova University, Villanova, USA.*

**Loisel J.** 2014. Insights and issues with quantifying Holocene peatland lateral expansion rate and associated carbon stocks. Invited oral presentation, *Department of Earth and Environmental Science, Rutgers University, New Brunswick, USA.*

**Loisel J, Yu Z, Beilman DW, Camill P, Holocene Peat Carbon Network.** 2013. A synthesis of northern peatland soil properties and Holocene carbon accumulation. Invited oral presentation, *AGU Fall meeting, San Francisco, USA.*

**Loisel J.** 2013. A bipolar perspective on carbon accumulation in peatlands over the Holocene. Invited oral presentation, *Lamont-Doherty Earth Observatory, Columbia University, Palisades, USA.*

**Loisel J.** 2013. Holocene history of high-latitude peatlands. Invited oral presentation, *Department of Earth Science, University of California – Santa Barbara, Santa Barbara, USA.*

**Loisel J.** 2013. A bottom-up approach for estimating the carbon density of circum-arctic peatlands. Invited oral presentation, *Department of Geography, McGill University, Montreal, Canada.*

**Loisel J.** 2012. The dynamic histories of Alaskan and Patagonian peatlands. Invited oral presentation, *Department of Geography, University of Toronto - Mississauga, Mississauga, Canada.*

**Loisel J.** 2011. Recent- and long-term peat-carbon accumulation: rates, timing, and climatic controls. Invited oral presentation, *School of the Environment & Society, Swansea University, Swansea, Wales.*

**Loisel J.** 2007. Carbon accumulation in Canadian boreal peatlands: Can climatic information be inferred from *Sphagnum*  $\delta^{13}\text{C}$  values? Invited oral presentation, *Centre for Environmental Change and Quaternary, University of Gloucestershire, Cheltenham, England.*

*Presentations with Proceedings or Published Abstracts*

**Loisel J, Nichols J, Kaiser K, Beilman D, Yu Z.** 2016. Cellulose and lignin carbon isotope signatures in *Sphagnum* moss reveal complementary environmental properties. Poster presentation, *AGU Fall Meeting, San Francisco, USA.*

**Loisel J, Jepson W.** 2016. Creating a common culture of evidence-based climate change science in higher education. Oral presentation, *AAG Annual Meeting, San Francisco, USA.*

**Loisel J, MacDonald G, Kremenetski K, Holmquist J.** 2015. Timing of fen-bog transition across the northern peatland domain. *INQUA Congress, Nagoya, Japan.*

**Loisel J, MacDonald G.** 2015. Late-Holocene Changes in Climate Variability, Variance, and Periodicity in the US Southwest, and Effects on Landscape Dynamics. Poster presentation, *Pacific Climate Workshop, Pacific Grove, USA.*

- Loisel J**, Yu Z, Beilman D, Kaiser K. 2014. Developmental history of an intriguing peat-forming community along the West Antarctic Peninsula. Poster presentation, *AGU Fall meeting*, San Francisco, USA.
- Loisel J**, Yu Z, Beilman D, Kaiser K. 2014. Biochemical, geochemical, and paleoecological analyses of a newly discovered peatland on the West Antarctic Peninsula. Oral presentation, *GSA Annual meeting*, Vancouver, Canada.
- Loisel J**, Nichols J, Beilman D, Yu Z, Kaiser K, Booth R. 2014. Solving the conundrum of carbon isotope signature in *Sphagnum* moss. Poster presentation, *GSA Annual meeting*, Vancouver, Canada.
- Loisel J**, Yu Z, Holocene Peat Carbon Network. 2014. Insights and issues with estimating Holocene peatland carbon stocks: a synthesis and review. Oral presentation, *EGU Annual meeting*, Vienna, Austria.
- Loisel J**, Yu Z, Beilman D, Bochicchio C, Dirksen O, Dirksen V. 2013. Holocene peatland-carbon dynamics in Kamchatka, Far East Russia. Poster presentation, *AGU Fall meeting*, San Francisco, USA.
- Loisel J**, Yu Z. 2013. Carbon accumulation in circum-arctic peatlands over the Holocene: a synthesis. Oral presentation, *Association of American Geographers*, Los Angeles, USA.
- Loisel J**, Yu Z. 2012. The unique developmental history of Patagonian peatlands. Oral presentation, *GSA Annual meeting*, Charlotte, USA.
- Loisel J**, Yu Z. 2012. Climate control of carbon sequestration in peatlands mediated by local-scale ecohydrological feedbacks. Oral presentation, *AGU Fall meeting*, San Francisco, USA.
- Loisel J**, Yu Z, D'Odorico P. 2012. Peatland dynamics in Patagonia: abrupt mid-Holocene fen-to-bog transition and carbon sequestration implications. Oral presentation, *14<sup>th</sup> International Peat Congress*, Stockholm, Sweden.
- Loisel J**, Yu Z. 2011. Southern peatlands: a new perspective on Holocene carbon dynamics. Oral presentation, *GSA Annual Meeting*, Minneapolis, USA.
- Loisel J**, Yu Z. 2011. Recent acceleration of carbon accumulation rates in wet boreal peatlands. Poster presentation, *AGU Fall Meeting*, San Francisco, USA.
- Loisel J**, Yu Z. 2010. Holocene peat-carbon dynamics in Patagonia: timing, rates, and potential causes. Oral presentation, *2nd International LOTRED-South America Symposium (PAGES)*, Valdivia, Chile.
- Loisel J**, Nolan J, Yu Z, Parsekian A, Slater L. 2010. The influence of landscape morphology on peatland dynamics and carbon accumulation inferred from ground penetrating radar (GPR) and



peat core analysis. Poster presentation, *AGU Fall Meeting*, San Francisco, USA.

**Loisel J**, Yu Z, Jones M. 2009. Expanding peatlands in Alaska caused by accelerated glacier melting under a warming climate. Oral presentation, *AGU Joint Assembly*, Toronto, Canada.

**Loisel J**, Yu Z, Jones M, Booth RK. 2008. Expanding sloping bog systems under a continental climate in south-central Alaska: possible causes and carbon-cycle implications. Poster presentation, *AGU Fall Meeting*, San Francisco, USA.

**Loisel J**, Garneau M, Hélie J-F. 2007. *Sphagnum*  $\delta^{13}\text{C}$  values as potential indicators of palaeo-hydrological changes in boreal peat bogs. Poster presentation, *AGU Fall Meeting*, San Francisco, USA.

#### Other Relevant Conference Presentations

**Loisel J**, Yu Z. 2011. Post-Little Ice Age warming induces a state shift in peat-carbon accumulation rates in Alaska. Oral presentation, *41st Arctic Workshop*, Montreal, Canada.

**Loisel J**, Yu Z, Jones M. 2009. Expanding peatlands in south-central Alaska: a response to glaciers-climate feedbacks? Poster presentation, *2nd International Symposium: Peatlands in the Global Carbon Cycle*, Prague, Czech Republic.

**Loisel J**, Garneau M. 2008. The effects of moisture, climate and vegetation on long-term carbon sequestration rates in a boreal peatland, James Bay, Québec, Oral presentation, *GAC-MAC Annual Meeting*, Québec, Canada.

**Loisel J**, Garneau M, Hélie J-F. 2007. Testate amoebae, *Sphagnum* carbon isotopic composition and other proxy data as palaeoindicators of surface-moisture changes in two boreal peatlands during the late Holocene: preliminary results. Oral presentation, *CANQUA Conference*, Ottawa, Canada.

**Loisel J**, Garneau M, Hélie J-F. 2007. Carbon accumulation in boreal peatlands estimated by *Sphagnum* carbon isotopic composition and proxy indicators. Poster presentation, *1st International Symposium: Peatlands in the Global Carbon Cycle*, Wageningen, The Netherlands.

#### **Research Grants and Proposals**

##### Pending Proposals

##### **Science for Nature and People Partnership (SNAPP)**

PIs: Julie Loisel, Jennifer Harden, Gustaf Hugelius

**\$119,530**

*Soil Banker: Tools for soil wealth evaluation and management*

##### **US National Science Foundation, Earth Sciences, MSB Program**

PIs: Zic Yu, Dave Beilman, Phil Camill, Steve Frohking, Julie Loisel, Qianlai Zhuang **\$3,283,788**

*Collaborative Research: RUI: MSB-FRA: Peat Expansion in Arctic Tundra – Pattern, Process, and the Implication for the Carbon Cycle in a Changing Climate (TundraPEAT)*

Funded Research Projects

**National Geographic Society, Committee for Research and Exploration** (02/2017-01/2018)

PI: Julie Loisel **\$21,820**

*The value of Magallanes peatlands on the carbon market*

**Instructional Technology Services, Texas A&M University** (01/2017-12/2019)

PIs: Julie Loisel & Charles Lafon **\$74,856**

*Bringing Research Experience to the Classroom via Virtual Science Field Trips, GEOG203*

**Department of Atmospheric Sciences, Texas A&M University** (07/2016-09/2017)

PIs: Julie Loisel & Gunnar Schade **\$18,000**

*The impacts of hydraulic fracturing on land-use change and air quality in the Eagle Ford Shale Region of South Texas – implementing an educational program for middle and high school students*

**US National Science Foundation, Earth Sciences, P2C2 Program** (07/2015-06/2017)

PIs: Zicheng Yu & Yongsong Huang **\$303,703**

*Water isotopes in peat mosses as proxies for understanding atmospheric circulation changes in southern Patagonia*

*\*\*\*I participated in project design and proposal writing*

**US National Science Foundation, Polar Programs, Antarctic Program** (05/2013-05/2016)

PIs: Zicheng Yu & David Beilman **\$238,669**

*Response of Carbon Accumulation in Moss Peatbanks to Past Warm Climates in the Antarctic Peninsula*

*\*\*\*I participated in project design and proposal writing, in addition to being hired as post-doc on this project*

**US National Science Foundation, Doctoral Dissertation Improvement Grant, Ecosystems Program** (07/2011-12/2012)

PIs: Julie Loisel and Zicheng Yu **\$14,610**

*Impacts of temperature and precipitation on peat-carbon dynamics in Alaska and Patagonia*

*\*\*\* My proposal was ranked 'Outstanding' by all four reviewers*

**Department of Earth and Environmental Sciences at Lehigh University, Palmer Research Grant** (09/2011-04/2012)

PI: Julie Loisel **\$2000**

*Peatland dynamics in Patagonia: abrupt mid-Holocene fen-to-bog transition and carbon sequestration*

**Department of Earth and Environmental Sciences at Lehigh University, Palmer Research Grant** (09/2010-04/2011)

PI: Julie Loisel **\$2000**

*Abrupt shifts of the Southern Hemisphere westerlies during the Holocene thermal maximum*

**Lehigh University Faculty Innovation Grant** (09/2009-09/2010)  
PIs: Zicheng Yu and Julie Loisel **\$25,000**  
*Holocene carbon dynamics of peatlands in Patagonia: toward a global synthesis*

**Department of Earth and Environmental Sciences at Lehigh University, Palmer Research Grant** (09/2009-04/2010)  
PI: Julie Loisel **\$2000**  
*Holocene peatland development in southeastern Patagonia: an important data and knowledge gap*

**Geological Society of America, Kerry Kelt Research Award** (09/2009-09/2010)  
PI: Julie Loisel **\$300**  
*Expanding peatlands in south-central Alaska: a response to glaciers-climate feedbacks?*  
*\*\*\* Limnogeology Division Special Award \*\*\**

**Indian & Northern Affairs Canada, Northern Scientific Program** (05/2007-05/2008)  
PIs: Julie Loisel and Michelle Garneau **\$2000**

### Fellowships and Competitive Scholarships

**Alexander Graham Bell Canada Doctoral Postgraduate Scholarship** (08/2008-08/2011)  
Natural Sciences and Engineering Research Council of Canada, stipend  
*\*\*\* The most prestigious award offered by the Canadian Government to PhD students \*\*\**

**Dean's PhD Fellowship, College of Arts and Sciences** (08/2011-07/2012)  
Lehigh University, tuition & stipend

**Quebec Doctoral Research Scholarship B2** (08/2008-08/2011) - declined -  
Fonds québécois de recherche sur la nature et les technologies, stipend

**College of Arts and Sciences Scholarship** (08/2008-06/2011)  
Lehigh University, tuition

**Quebec Masters Research Scholarship B1** (06/2007-06/2008)  
Fonds québécois de recherche sur la nature et les technologies, stipend

**Alexander Graham Bell Canada Masters Postgraduate Scholarship** (06/2006-06/2007)  
Natural Sciences and Engineering Research Council of Canada, stipend  
*\*\*\* The most prestigious award offered by the Canadian Government to MSc students \*\*\**

**Fairfax Financial Holdings Ltd Scholarship** (09/2004-09/2006)  
Association of Universities and Colleges of Canada, stipend

**Excellence in Research Scholarship** (02/2006-05/2006)  
Université du Québec à Montréal Foundation, stipend

**Student Exchange Program Scholarship** (03/2006-06/2006) - declined -  
Ministère de l'Éducation, Loisir et Sport du Québec (for U. Lausanne), stipend

**Atmospheric and Meteorological Science Award** (05/2005-08/2005)  
Natural Sciences and Engineering Research Council and Environment Canada, stipend

**Undergraduate Student Research Award** (05/2005-08/2005)  
Natural Sciences and Engineering Research Council of Canada, stipend

**Undergraduate Student Research Award** (05/2004-08/2004)  
Natural Sciences and Engineering Research Council of Canada, stipend

**Canada Excellence Award for Leadership** (09/2004-09/2005)  
Canada Millennium Scholarship Foundation, stipend

### **Workshops and Technical Course Attendance**

2017 **International Soil Carbon Network action group workshop**, organized by J Harden  
Stanford School of Earth, Energy, and Environmental Sciences (Stanford, USA)

2016 **NOVUS III Workshop on ecosystem disturbance**, organized by K McLauchlan  
NSF RCN, Cedar Creek LTER, and University of Minnesota (Minneapolis, USA)

2015 **Embedding research in undergraduate classes**, thought by D Mogk  
American Geophysical Union (San Francisco, USA)

2014 **Introduction to ground-based lidar for Earth Science Research**, thought by C Crosby  
Geological Society of America (Vancouver, Canada)

2013 **Near-surface geophysics for non-geophysicists**, thought by G Baker  
Geological Society of America (Denver, USA)

2013 **Plant macrofossil identification**, thought by C Yansa and GM Macdonald  
Association of American Geographers (Los Angeles, USA)

2013 **Tackling the statistical challenges of interpreting past environmental change**  
Center for Discrete Mathematics and Theoretical Computer Science (Newark, USA)

2012 **Mars for Earthlings: Teaching modules integrating Earth and Planetary Science**  
Geological Society of America (Charlotte, USA)

2012 **Preparing for an academic career in the geosciences**  
Cutting Edge Research Group (Chapel Hill, USA)

- 2012 **Science and policy conference**  
American Geophysical Union (Washington D.C., USA)
- 2012 **Science communication**  
National Geographic Society (Washington D.C., USA)
- 2010 **Teacher development series**  
Lehigh University (Bethlehem, USA)
- 2009 **Acquisition, visualization, and interpretation of lidar-derived DEMs**  
Geological Society of America (Portland, USA)
- 2008 **4th international workshop on the ecology of *Sphagnum***, organized by D Vitt & J Shaw  
PeatNet (Anchorage and Juneau, USA)
- 2006 **Peatland ecology and bryophyte identification**, thought by L Rochefort  
Université Laval (Québec, Canada)

Field research experience

- 2017 Kananaskis Research Station, Alberta, Canada (upcoming)
- 2017 Cordillera Vilcanota, Andes, Peru
- 2016 Cedar Creek Ecological Reserve, Minnesota
- 2014 Rocky Mountains, Utah
- 2014 Antarctic Peninsula
- 2013 Mackenzie River Basin, Alberta and NW Territories, Canada
- 2011 Big Island, Hawai'i (field course)
- 2010, 14 Southern Patagonia, Chile and Argentina
- 2009 Northern Apennines, Italy (field course)
- 2008-10 South-Central, South-Eastern, and the Interior, Alaska
- 2006, 07 James Bay Lowlands, Québec, Canada
- 2004, 05 Lanoraie Peatland Conservation Area, Québec, Canada

Organizational Memberships

- |  |   |
|--|---|
| Association of American Geographers, AAG   | American Geophysical Union, AGU         |
| Ecological Society of America, ESA         | Geological Society of America, GSA      |
| Canadian Association of Palynologists, CAP | Canadian Quaternary Association, CANQUA |
| Botanical Society of America, BSA          | International Peat Society, IPC         |
| International Soil Carbon Network, ISCN    |   |

## Science Education / Social Venture Experience in Sustainability Science

2013: I was awarded a **Lehigh University Core Competencies Grant** award (\$2500) as well as the prestigious **Baker Startup Grant for Social Ventures** (\$2500) at the Annual Eureka Venture Series for Entrepreneurship (Baker Institute, Lehigh University) to implement 'Turning Trash into Treasure', a unique and easy-to-use composting kit for schools (see below). The kit includes Earth Science lessons and experiments, the equipment required for composting cafeteria food scraps, entrepreneurial activities for kids, and more.

2013: Developed and implemented a **composting program** entitled 'Mission Compost: Turning Trash into Treasure' at Broughal Community Middle School, Bethlehem USA.

*\*\*\*Thanks to this initiative, Broughal was awarded a U.S. Dept. of Education Green Ribbon in 2013*

## Service

- 2008- Peer reviewer for over 50 scientific research articles submitted to international journals including *Nature*, *PNAS*, *EPSL*, *GRL*, *QSR*, *GCA*, *JGR*, *Ecology*, *Earth Science Reviews*, etc.
- 2017- Scientific Steering Group member, International Soil Carbon Network (ISCN).
- 2014- Steering Group Committee member, *C-PEAT (Carbon in Peat on Earth through Time)*, a *Past Global Changes (PAGES)* Working Group on climate forcings.
- 2014- Lead session chair in multiple conferences, including GSA, AGU, and AAG meetings
- 2016 Guest Editor for a special issue of *Quaternary International* on American Southwest paleoclimatology
- 2014 Guest Editor for a special issue of *The Holocene* on Holocene carbon dynamics in the circum-arctic region