Frédéric Cyr | Ph.D.

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Education

Université du Québec à Rimouski (UQAR-ISMER) **Rimouski, Canada**
Ph.D. - Oceanography *2009-2014*
Citation of Excellence

Université de Versailles-St-Quentin-en-Yvelines **Saclay, France**
M.Sc. - Climatology *2007-2008*

École Nationale Supérieure de Techniques Avanceée (ENSTA-Paristech) **Paris, France**
M.Sc. - Environmental Engineering *2006-2008*
Combined degree with École Polytechnique de Montréal

École Polytechnique de Montréal **Montréal, Canada**
B.Eng. - Engineering Physics *2004-2008*
Citation of Excellence & International Profile

Work

Research Positions

Fisheries and Oceans Canada, Northwest Atl. Fish. Centre (NAFC) **St. John's, Canada**
Research Scientist *2019-*
Multi-scale physical-biogeochemical interactions in the NW Atlantic ocean
Report ocean climate for the Atlantic Zone Monitoring Program (AZMP)

Fisheries and Oceans Canada, Northwest Atl. Fish. Centre (NAFC) **St. John's, Canada**
Physical Scientist *2017-2019*
Multi-scale physical-biogeochemical interactions in the NW Atlantic ocean
Report ocean climate for the Atlantic Zone Monitoring Program (AZMP)

Mediterranean Institute of Oceanography (MIO) **Marseille, France**
Post-Doctoral research position (European project NeXOS) *2016-2017*
Development of a new glider optical sensor (*MiniFluo-UV*)
Dissolved organic matter dynamics in NW Mediterranean Sea

Royal Netherlands Institute for Sea Research (NIOZ) **Texel, Netherlands**
Post-Doctoral Fellow (FRQNT funded, 2 years) *2014-2015*
Mixing and biogeochemical exchanges caused by internal waves

Fisheries and Oceans Canada, Maurice Lamontagne Institute **Mont-Joli, Canada**
Physical scientist (3-month contract) *2013*
Thermal fronts in Canadian Coastal Waters

Teaching

Cégep de Rimouski **Rimouski, Canada**
Teacher (college level) *2011-2012*
2 courses, 50 students

Université du Québec à Rimouski **Rimouski, Canada**
Lecturer *2010*
1 course, 2 students

Université du Québec à Rimouski **Rimouski, Canada**
Teaching Assistant *2010*
1 course, 15 students + free revision periods

École Polyvalente des Iles **Iles de la Madeleine, Canada**
High-school Teacher (3-month) *2009*
Mathematics teacher, 1 class of 20 students

Academic Services

Training HQP

PhD committee member, Fernando Sobral, Dalhousie University (Halifax) Since 2019
High-resolution numerical modeling of the Labrador shelf (preliminary title)

Postdoc advisor, Olivia Gibb, DFO-NAFC (St. John's) Since 2018
Ocean acidification and biogeochemical changes in the Atlantic Zone (18-month)

Postdoc advisor, Ali Moridnejad, DFO-NAFC (St. John's) 2018
Recent ocean conditions changes on Newfoundland and Labrador shelves (3-month)

Internship supervisor, Rémi Chassagne (Undergraduate) 2015
Internal tides generation by topographically-trapped waves (3-month)

Internship co-supervisor, Camil Hamel (Undergraduate), ISMER-UQAR (Rimouski) 2011
Turbulent nitrate fluxes in the Amundsen Gulf, part II (4-month)

Internship co-supervisor, Camil Hamel (Undergraduate), ISMER-UQAR (Rimouski) 2010
Turbulent nitrate fluxes in the Amundsen Gulf, part I (4-month)

Examiner roles

MSc external examiner, Nicolai von Oppeln-Bronikowski, MUN (St. John's) 2019
Glider-Based O_2 and CO_2 Observations in the Labrador Sea

MSc external examiner, Jean-Luc Shaw, ISMER-UQAR (Rimouski) 2019
Hydrodynamique de la Baie de Sept-Iles

Editorial role

Associate Editor — Since 2018

Frontiers in Marine Science - Physical Oceanography.

Funded Research

DFO glider proposal — **~$30K (*in-kind*)**
Variability of the circulation on the Newfoundland shelf — *2019*
Lead PI

Multi-partner Oil Spill Research Initiative (MPRI) Research Proposal — **$1.38M**
Oil spill reconnaissance through robotic autonomous underwater vehicle — *2018-2022*
Advisor on Lewis et al.

DFO ACCASP proposal — **$143K**
Recent changes in the biogeochemistry of Northwest Atlantic water masses — *2018-2020*
Lead PI

Ocean Frontier Institute Seed Fund Proposal — **$14.3K**
Monitor Placentia Bay for hydrocarbons using underwater gliders — *2018-2019*
Collaborator on Lewis et al.

INSU 2018 - *Océan-Atmosphère* Section — **~$11.5K)**
Lagrangian observations of deep ocean circulation in the NW Atlantic — *2018-2019*
Collaborator on Desbruyeres et al.

SOCIB glider proposal — **~$3.5K (*in-kind*)**
Ship time and facility use during Pre-SWOT campaign — *2018*
co-PI with A. Doglioli

DFO glider proposal — **~$10K (*in-kind*)**
Variability of the Inner Labrador Current on the Newfoundland and Labrador shelf — *2018*
Lead PI

DFO ACCASP proposal — **$27K**
Northwest Atlantic water masses biochemical modifications in a changing climate — *2018*
Lead PI

FRQNT Postdoctoral Fellowship — **$63.3K**
Internal waves and vertical exchanges in the ocean — *2014-2015*
Main applicant

FRQNT Doctoral Research Scholarship — **$60K**
Turbulent mixing in the lower St. Lawrence Estuary — *2009-2012*
Main applicant

Peer-Reviewed Publications

2019: d'Ovidio, F., A. Pascual, J. Wang, A. Doglioli, J. Zhao, S. Moreau, G. Gregory, S. Swaart, S. Speich, F. Cyr, B. Legresy, Y.Chao, L. Fu, & R. A. Morrow, Frontiers in fine scale in-situ studies: opportunities during the SWOT fast sampling phase, *Frontiers in Marine Science*, 10.3389/fmars.2019.00168.

2019: Cyr, F., M. Tedetti, F. Besson, N. Bhairy & M. Goutx, A new glider-compatible fluorometer

for the detection of polycyclic aromatic hydrocarbons in the marine environment, *Frontiers in Marine Science*, 10.3389/fmars.2019.00110.

2017: Cyr, F., M. Tedetti, F. Besson, L. Beguery, A. M. Doglioli, A. A. Petrenko and M. Goutx, A new glider-compatible optical sensor for dissolved organic matter measurements: test case from the NW Mediterranean Sea, *Frontiers in Marine Science*, 4(89) 10.3389/fmars.2017.00089.

2016: Dufour, K., F. Maps, S. Plourde, P. Joly and F. Cyr, Impacts of intraguild predation on Arctic copepod communities, *Frontiers in Marine Science*, 3(185) 10.3389/fmars.2016.00185.

2016: van Haren, H., A. A. Cimatoribus, F. Cyr and L. Gostiaux, Insights from a 3-D temperature sensors mooring on stratified ocean turbulence, *Geophysical Research Letters*, 43(9), 4483-4489, 10.1002/2016GL068032.

2016: Cyr, F., H. van Haren, F. Mienis, G. Duineveld and D. Bourgault, On the influence of cold-water coral mound size on flow hydrodynamics, and vice-versa, *Geophysical Research Letters*, 43(2), 775-783, doi:10.1002/2015GL067038.

2016: Cyr, F. and H. van Haren, Observations of small-scale secondary instabilities during the shoaling of internal bores on a deep-ocean slope, *Journal of Physical Oceanography*, 46(1), 219-231, doi:10.1175/JPO-D-15-0059.1.

2015: Bourgault, D. and F. Cyr, Hypoxia in the St. Lawrence Estuary: How a Coding Error Led to Believe that "Physics Controls Spatial Patterns", *PLOS ONE*, 10(9):e0138858, doi:10.1371/journal.pone.0138858.

2015: Cyr, F., D. Bourgault, P. S. Galbraith and M. Gosselin, Turbulent nitrate fluxes in a large-scale estuary, *Journal of Geophysical Research-Oceans*, 120, 2308-2330, doi:10.1002/2014JC010272.

2015: Cyr, F., D. Bourgault and P. S. Galbraith, Behavior and mixing of a cold intermediate layer above a sloping boundary, *Ocean Dynamics*, 65(3), p.357-374, doi:10.1007/s10236-014-0799-1.

2015: Cyr, F. and P. Larouche, Thermal front atlas of Canadian coastal waters, *Atmosphere-Ocean*, 53(2) doi:10.1080/07055900.2014.986710.

2014: Bourgault, D., F. Cyr, D. Dumont and A. Carter, Numerical simulations of the spread of floating passive tracer released at the Old Harry prospect, *Environmental Research Letters*, 9, 054001.

2012: Bourgault, D., F. Cyr, P. S. Galbraith and E. Pelletier, Relative importance of pelagic and sediment respiration in causing hypoxia in a deep estuary, *Journal of Geophysical Research*, 117, C08033.

2011: Cyr, F., D. Bourgault, and P. S. Galbraith, Interior versus boundary mixing of a cold intermediate layer, *Journal of Geophysical Research*, 116, C12029.

2011: Bourgault D., C. Hamel, F. Cyr, J.-É. Tremblay, P. Galbraith, D. Dumont and Y. Gratton, Turbulent nitrate fluxes in the Amundsen Gulf during ice-covered conditions, *Geophysical Research Letters*, 38, L15602.