

Curriculum Vitae (David William O'Connell)

Current Position and Contact Details

Dr. David William O'Connell (Research Fellow) Dept. of Civil, Structural and Environmental Engineering, Trinity College Dublin, Ireland. (Adjunct Assistant Research Professor) Dept. Earth and Environmental Science, University of Waterloo, Canada.

Summary

Research interests involve studying the redox chemistry of groundwater-surface water zone in various environments and how this affects surface water quality, GHG emissions and aquatic biodiversity. Particularly interested in biogeochemical transformations of P, Si and Fe in the hyporheic and riparian zones and fluvial sediments within river catchments with impacts on aquatic biodiversity. Interested in the fate and transport of water-borne pollutants in the natural and built environment, as well as predictive modelling and environmental policy. My areas of research interest over the course of my career have been in the fields of advanced materials coupled to water treatment systems, nutrient biogeochemistry, hydrogeology, wetland hydrology and biogeochemistry, karst hydrology, groundwater water resources, catchment hydrology, sediment transport and nutrient dynamics.

Career Profile

2015-2017 Research Fellow, Dept. of Civil, Structural and Environmental Engineering, TCD.
2014-2017 (Adjunct) Research Assistant Professor, University of Waterloo, Canada.
2011-2014 Research Associate, Ecohydrology Group, University of Waterloo, Canada.
2008-2010 Research Associate, University of Copenhagen, Denmark.
2007-2008 Environmental Engineer/Geoscientist, Douglas Partners, Melbourne, Australia.

Recent Relevant Research Funding

2017 - 2020	JPI Research Grants "Eutro-SED Project" an International Project with partners in Canada, Ireland and Sweden (€700,000 Co-applicant author)
2015 - 2016	GSI- Griffith Research Award. <i>Characteristics of stable isotope fractionations during reactive transport of phosphate in groundwater discharging to a groundwater fed lake (Lough Gur, Co Limerick)</i> (€25,000 Co-applicant author)
2012 - 2016	EPA Research Grants "Biogeochemical cycling of nitrates in Irish estuaries" Cindy Smith, Gavin Collins, David O'Connell (€72,000 Co-applicant author)

Publication overview & selected publications

- Parsons, C.T., Rezanezhad, F., O'Connell, D.W., Van Cappellen, P., Sediment phosphorus speciation and mobility under dynamic redox conditions, *Biogeosciences Discuss*, (2017), doi:10.5194/bg-2016-533.
- Lima, A.T., Mitchell, K., O'Connell, D.W., Verhoeven, J.T.A., Van Cappellen, P., The legacy of surface mining: Remediation, restoration, reclamation and rehabilitation, *Environmental Science and Policy*, (2016) ,Volume 66, 1, 227-233.
- O'Connell, D.W., Jakobsen, R, Mark Jensen, M, Thamdrup, B, Andersen, T.J, Kovacs, A, Bruun Hansen, H.C., Vivianite formation and its role in phosphorus retention in Lake Ørn, Denmark. *Chemical Geology*, (2015), 409, 42-53.
- Orihel, D.M, Schindler, D.W, Ballard, N.C, Graham, M.D, O'Connell, D.W., Wilson, L.R, Vinebrooke, R.D., The "nutrient pump:" Iron-poor sediments fuel low nitrogen-to-phosphorus ratios and cyanobacterial blooms in polymictic lakes. *Limnology & Oceanography*, (2015), 60, 3, 856-871.
- F. Rezanezhad, R-M. Couture, R. Kovac, D. O'Connell, P. Van Cappellen. An automated fluctuating water table column system to study soil biogeochemistry under redox-dynamic conditions. *Journal of Hydrology*, (2014) 509, 245-256.
- Walpersdorf, E., Heiberg, L, O'Connell, D.W., Koch, C.B., Kjærgaard, C., Jensen, H.S., Hansen, H.C.B. Does vivianite control phosphate concentrations in anoxic soils? *Geoderma*, (2013) 193, 189-199.