

## Professor Wach Awarded D'Arcy McGee Beacon Fellowship

D'Arcy McGee (1825-1868) was an Irish journalist, poet, historian, and a politician. His political views led to his involvement in the Young Irelander Rebellion during the Famine in 1848; as a result, he fled to the United States to evade arrest, and eventually to Montreal, Canada. McGee's political views evolved away from republicanism towards supporting a model of self-government within the British Empire, and he played an important role in the confederation of Canada. His vision for Canada to be built on a foundation of tolerance, inclusivity, and diversity, along with his support for minority rights, can be viewed by Irish and Canadian contemporaries as modern and progressive for his time.



Professor Grant Wach has been awarded the prestigious D'Arcy McGee Beacon Fellowship by the Ireland Canada University Foundation (ICUF). This fellowship enables leading Irish and Canadian academics, researchers, and thinkers to connect and engage, via online lectures. The program consists of a Beacon lecture and a smaller lecture/workshop series. Professor Wach will showcase his research in Energy Sustainability, Atlantic Margin Geology, and Geoforensics. This lecture fellowship is the latest in a long history of collaboration between Professor Wach and the Irish geological community over three decades beginning in 1991.

In the inaugural D'Arcy McGee Beacon Fellowship Lecture, Professor Mary McAleese, former President of Ireland, and Chancellor of Trinity University, remarked that since the days of D'Arcy McGee, we have learned that “change is coming, but it is not always predictable”, and this sentiment is an accurate description of the energy transition we are seeing unfold in Ireland and Canada.

The Irish government through the PIP Infrastructure Programme with Nick O'Neill, has supported Irish and Canadian graduate students at Dalhousie University with Professor Wach including support for former M.Sc. students Charles Carlisle and Carla Skinner to complete their work on offshore Irish sedimentary basins. The PIP programme was also a major sponsor of the Conjugate Margins Conferences, co-founded by Professor Wach, a biennial scientific meeting focused on improving knowledge on the geological evolution of the divergent Atlantic margin basins. Held in Halifax in 2008 (inaugural meeting) and 2018, and in Dublin in 2012, these conferences attract researchers from both sides of the Atlantic and around the globe.

Professor Wach also worked with SLR Ireland on projects here in Nova Scotia and completed a study of the CO<sub>2</sub> storage potential of Nova Scotia, Carbon Transport and Storage Assessment Offshore Nova Scotia, for the Nova Scotia Government CCS Research Consortium of Nova Scotia in 2012. The most recent product of this collaboration was a Proposal for an Assessment of Geothermal Resources in Onshore Nova Scotia, submitted to the Nova Scotia Offshore Energy Research Association (OERA) in spring 2020. Professor Wach has collaborated for many years with Dr. Alastair Ruffell at Queen's University in Belfast. Research themes cover investigations of the paleogeographic and paleoclimate studies particularly of the Mesozoic of the Atlantic margin, and include studies of Geoforensics, Stratigraphy, Sedimentology, Reservoir Characterization, often incorporating include Lidar, and Ground Penetrating Radar (GPR). Recent collaboration includes correlation of Fitton's and Casey's stratigraphy with offshore borehole 99/16-1 (Ruffell and Wach, 2020) and Location of the Brecourt (Normandy, France) WW2 Howitzer battery using a geoforensic search strategy (Ruffell and Wach, 2019). Professor Wach also retains strong research ties with Dr. Ricardo Silva, former Dalhousie University BRL postdoctoral fellow who moved on to Trinity College/University College Dublin and who remains an Adjunct at Dalhousie.

Professor Wach is looking forward to strengthening his research ties with Ireland and engaging with Irish researchers through this fellowship.





## **D'Arcy McGee Beacon Fellowship Lecture Series**

March 2021

### **The Energy Transition The Greening of Atlantic Canada and Ireland**

Professor Grant Wach  
Dalhousie University, Halifax, Canada

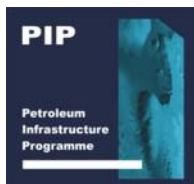
#### **Abstract**

The achievements of Thomas D'Arcy McGee are a tribute to the long, intertwined history of Canada and Ireland. His vision for Canada to be built on a foundation of tolerance, inclusivity, and diversity, along with his support for minority rights, can be viewed by Irish and Canadian contemporaries as modern and progressive for his time. McGee's forward-thinking approach can today be used to manage our global challenges, such as the need to improve energy sustainability. In the inaugural D'Arcy McGee Beacon Fellowship Lecture, Professor Mary McAleese, former President of Ireland, and Chancellor of Trinity University, remarked that since the days of D'Arcy McGee, we have learned that "change is coming, but it is not always predictable", and this sentiment is an accurate description of the energy transition we are seeing unfold in Ireland and Canada.

Access to energy has been recognized by The United Nations Economic Commission for Europe (UNECE) as "critical for assuring quality of life", and at present 80 per cent of the energy usage in the UNECE region is fossil-fuel based. Many countries are reliant on non-renewable sources for their energy security and economic well-being, yet there is a growing global urgency to transition to a more sustainable energy future with increased dependence on renewable energy sources, improved energy efficiency, and reduced global carbon emissions. Ireland is making great strides in the energy transition with reduced carbon emissions from thermal coal electricity production and recorded a 4.5% reduction in energy-related CO2 emissions in 2020 compared to the previous year.

Canada also has carbon reduction targets that the energy transition must help achieve. In Atlantic Canada, the provinces are in a unique position to become a green energy powerhouse, with reduced dependence on fossil fuels and to help lead Canada, and the World, in the transition to clean energy. An area we call the Energy Corridor, straddling the New Brunswick and Nova Scotia boundary, has all the components for green energy success, including regular wind patterns in the nearby Gulf of St. Lawrence, salt deposits suitable for energy storage, and a central location with power links to the northeastern U.S.A.

Research such as Scotian and Sydney Basin Carbon Capture and Storage for emission reduction, renewable energy sources such as biomass, geothermal, tidal, hydrogen, and wind energy, and the energy storage potential in salt caverns will be discussed with other issues contributing to the overall energy situation in Atlantic Canada. This lecture will present an overall picture of the 'greening' of Atlantic Canada provinces with comparisons to Ireland, review the vision for the energy future, and highlight opportunities to improve energy sustainability in the region. To paraphrase Professor McAleese, yes change is coming, and it is always not predictable, but we need to prepare, now.



**Professor Grant Wach, DPhil, FGS, PGeo**

Basin and Reservoir Lab, Department of Earth and Environmental Sciences,  
Dalhousie University, Halifax, Nova Scotia, Canada

[Grant.wach@dal.ca](mailto:Grant.wach@dal.ca)

[www.dal.ca/sustainable-energy](http://www.dal.ca/sustainable-energy)



### Biography

Professor Grant Wach is honoured to accept the D'Arcy McGee Beacon Fellowship, awarded by the Ireland Canada University Foundation (ICUF). The Fellowship enables leading Irish and Canadian academics and thinkers to connect and engage via lectures, and Professor Wach will showcase his research in Energy Sustainability, Palaeogeographic and Palaeoclimatic evolution of the Atlantic margins, and Geoforensics. This lecture fellowship is the latest in a long history of collaboration and research between Professor Wach and the Irish geological community over the past three decades. The Irish government through the PIP Infrastructure Programme with Nick O'Neill, has supported Irish and Canadian graduate students at Dalhousie University including support for former M.Sc. students Charles Carlisle and Carla Skinner for their work on offshore Irish sedimentary basins. The PIP programme was also a major sponsor of the Conjugate Margins Conferences, co-founded by Professor Wach, a biennial scientific meeting focused on the geological evolution of the divergent Atlantic margin. Held in Halifax in 2008 (inaugural meeting) and 2018, and in Dublin in 2012, these conferences attract researchers from both sides of the Atlantic, and from around the globe.

Professor Grant Wach began his geology career advising worldwide for multinational companies. He still works with the energy sector but today in his capacity as Professor of Geoscience at Dalhousie University he now serves as a mentor, helping students become successful geoscientists. His research goal is to understand the reservoir component of CCUS and Geothermal systems; understanding the internal complexity of the reservoir is not easy but part of the path to Energy Sustainability, and Carbon Neutrality. These steps are part of the Energy Transition the World is now undergoing.

Professor Wach is an expert advisor to the Energy Sustainability Committee of the UNECE and team has just released their technology brief on CCUS [CCUS brochure\\_EN\\_final.pdf \(unece.org\)](#). He has advised the Nova Scotia government on Carbon Storage and Sequestration and completed the first evaluation of basins in the Maritimes for Carbon Storage. He was principal Investigator of the Gas Seepage Project (GaSP), the first multi-stakeholder initiative that has evaluated and conducted methane (CH<sub>4</sub>) emission inventories from legacy coal and oil and gas extraction sites in Atlantic Canada.

Professor Wach studied at the Western University (Hons. B.A. Geog.); University of South Carolina (M.Sc. Geology) and the University of Oxford (D.Phil. Geology). He was the first recipient of the AAPG Foundation Professor of the Year Award in 2012 and was the recipient of the CSPG Stanley Slipper Gold Medal 2018 for outstanding contributions to exploration and development, teaching and mentorship.

