**Name**: Dr Patrick Walsh
**Institute**: Technological University of the Shannon
**ORCID ID** : https://orcid.org/0000-0002-0154-2384
**School/Department**: Dept. of Mechanical & Automobile Engineering,
**Qualification / Awarding Body:** PhD, University of Limerick
**Primary Degree(s) / Date of Award:** BEng. Manufacturing Engineering, Sept 2000.

**Experience (Higher Education / Industry):**
- **Senior Lecturer (Sept 2008 – Present) –** Technological University of the Shannon (TUS) [formally LIT].

**Number of post-graduate research students supervised to date. Masters / PhD:** 40 (34 past, 4 current) research theses as part of taught Masters; One past PhD student (2023); Two (current) PhD students – One as Primary Supervisor and one as Co-Supervisor; Acted as internal examiner for a UL PhD viva (March 2018).

**Publication record to date.** A total of >20 academic publications: 6 peer reviewed academic journals; and >15 conference contributions. Some of the more recent/relevant include:

A Systems Thinking Approach Investigating the Estimated Environmental and Economic Benefits and Limitations of Industrial Hemp Cultivation in Ireland from 2017–2021. Sustainability 2022, 14, 4159
Sustainability
2022-10-20 | Journal article
DOI: 10.3390/su142013551
Contributors: Sinéad M. Madden; Alan Ryan; Patrick Walsh

Exploratory Study on Modelling Agricultural Carbon Emissions in Ireland
Agriculture
2021-12-28 | Journal article
DOI: 10.3390/agriculture12010034
Contributors: Sinéad M. Madden; Alan Ryan; Patrick Walsh

Mathematical Modelling of a Wave-Energy Converter
European Consortium for Mathematics in Industry ECMI 2016: Progress in Industrial Mathematics at ECMI 2016 pp 201-206
2018-03-21 | Conference paper

Investigation of RHF Contracts in a Supply Chain under Stochastic Market Demand
Lambert Academic Publishing
2009-10-01 | Book

"Investigation of RHF Contracts in a Supply Chain Under Highly Variable Stochastic Demand."
IMA Journal of Management Mathematics
2008-09-01 | Journal article

"How RHF Contracts Alter Demand Information."
International Journal of Systems Science
2007-09-01 | Journal article

Industrial Experience:
10 years as a senior Production Engineer and Manager in small to medium manufacturing industries in Ireland.

**Record of securing research funding.**

Secured €20K for Wave Energy Prototype Development in 2009 for Limerick Wave Ltd.

Secured €10k from Blue Internationalisation fund from EU for developing a Power Take Off (PTO) for Wave Energy Converters (WEC). 2022

Tested PTO in the Oceanic Centre Ringaskiddy Co. Cork.

I am actively engaged in research.
My interest in research started in modelling with my Phd Investigation of RHF Contracts in a Supply Chain under Stochastic Market Demand. Manufacturing and Operations Engineering Department. Limerick, University of Limerick. **PhD**.: 240.

With two refereed journal publications and eight conference papers.
Walsh, M. P., A. P. Williams and C. Heavey (2008). "Investigation of RHF Contracts in a Supply Chain Under Highly Variable Stochastic Demand." IMA Journal of Management Mathematics 19: 117-135
Walsh, M. P., A. P. Williams and C. Heavey (2007). "How RHF Contracts Alter Demand Information." International Journal of Systems Science 33(1): 61-80

I am an active researcher in TUS through ACORN in sea based renewable energy and in process + optimisation.
I am the CEO of Limerick Wave Ltd. We are a research company focusing on the power take off (PTO), this technology is used by a wave energy converter (WEC) to convert the mechanical power of the sea waves into electricity.
www.limerickwave.com
Cian Murtagh graduated from LIT with a Masters of Engineering in "Mechanical Direct Drive Power Take Off for the Capture of Mechanical Energy from the Sea Waves.". (2018)
Publication: https://doi.org/10.1007/978-3-319-63082-3_30

I am supervising pone Phd student in TUS in the process area.
James Ryan: "Safety 4.0" A roadmap for industrial implementation. The reduction of health and safety risk in the workplace using cyberphysical systems.

Graduated: Patrick Ruane: Using Advanced Simulation to improve the design process for highly automated manufacturing equipment.
I am supervising 8 Engineering Master students in TUS in the process area:

I am co-supervising one Phd student from UL in modelling:
Sinead Madden: A System Dynamics Model Utilising Hemp Sativa for the Abatement of Greenhouse Gas Emissions Within Agriculture in Ireland by 2050.