About Don L. Boyer

Don Lamar Boyer, a pioneer of physical modeling of rotating and stratified topographic flows, passed away in Las Vegas, Nevada on June 19, 2020. A visionary in and champion for geophysical and environmental fluid dynamics research, a dedicated mentor and a skilled administrator, he played an influential leadership role in the evolution of laboratory-based research in environmental flows.

Endowed Annual Lecture

In his honor, the Don L. Boyer Memorial Endowment for Excellence in Environmental Fluid Dynamics has been created to support groundbreaking, crucial lectures in the important fields of environmental prediction, risks, and sustainability. These lectures, emphasizing the fundamental dynamics of environmental flows in the spirit of the research of Don L. Boyer, will enliven the conversation around these topics in the college and beyond. This lecture will be supported annually in perpetuity by the fund.

The endowment was established by an initial gift from Dr. Dustin Boyer, Don's son. Donations to the fund can be made at giveto.nd.edu.

https://efmlab.nd.edu/don-l-boyer-memorial-endowment/

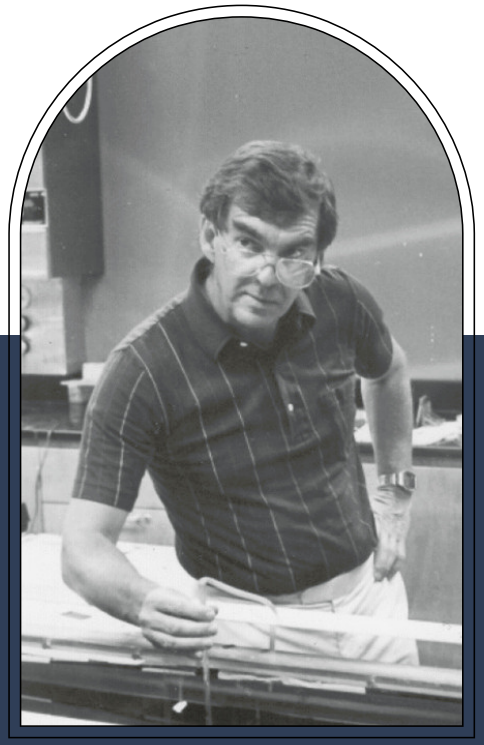
ENGINEERING AT NOTRE DAME

Engineering at Notre Dame combines technical inquiry with a creative bent to develop innovations that can improve the health, well-being, and quality of life for all persons. Consistent with the University's Catholic mission and heritage, the College of Engineering's mission is founded on the principle that the creation and transfer of fundamental knowledge should reflect a profound and complete respect for the dignity of all persons and for the greater common good of humanity. The Don L. Boyer Memorial Endowment supports faculty, students, and the scientific community at large in the pursuit of achieving the educational mission and outreach of the University.

UNIVERSITY OF NOTRE DAME

DON L. BOYER DISTINGUISHED LECTURE

in Environmental Fluid Mechanics



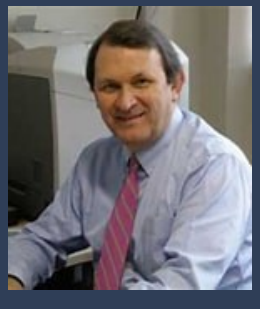
Tuesday, March 21, 2023

Lecture 11:00 am - 12:00 pm

Lunch Reception 12:00 pm - 1:00 pm

Eck Visitors Center Auditorium

Dr. Peter A. Davies



Emeritus Professor of Fluid Dynamics,
University of Dundee, UK

BIOGRAPHY

Professor Peter Davies is Emeritus Professor of Fluid Dynamics at the University of Dundee, UK. He graduated in 1966 in Physics and Mathematics from the University of Newcastle upon Tyne, UK and received his PhD in geophysical fluid dynamics from the same institution in 1971. He was awarded a 2-year Postdoctoral Fellowship by the Royal Society of London (tenable 1971-73 at the International Meteorological Institute, University of Stockholm, Sweden) and then spent 7 years as a Senior Research Associate in the Department of Physics at the University of Newcastle upon Tyne. In 1980, following a short period as a Visiting Scientist in the Department of Mechanical Engineering, University of Wyoming, he moved to a Lectureship in Fluid Mechanics in the Department of Civil Engineering at the University of Dundee where he has spent the rest of his career.

His research interests lie in stratified, rotating and buoyancy-driven flows relevant to geophysical and environmental phenomena, remote sensing of coastal processes and biofluid dynamics.

He is an elected Fellow of (i) Scotland's National Academy (the Royal Society of Edinburgh (RSE)), and (ii) the Norwegian Academy of Science & Letters and a recipient in 2013 of the Lord Kelvin Medal of the RSE. In 2021 he was elected to Honorary Membership of the International Association for Hydro-Environment Engineering and Research (IAHR). Between 1981 and 1983 he served as Vice President of the European Geophysical Society and over the past 40 years he has served on many national and international Scientific Advisory Committees and Governing Boards as well as Government Advisory Panels and Task Forces. Until his retirement in 2020 he served as an Associate Editor of Journal of Hydraulics Research and Environmental Fluid Mechanics and Editor of Engineering & Computational Mechanics.

Modeling the Behavior of Internal Solitary Waves in Stratified Waters

ABSTRACT

Internal solitary waves (ISWs) are ubiquitous features of many stratified marine and lacustrine environments. They are highly nonlinear internal waves traveling on density interfaces below the free surface of the water body and they typically have amplitudes comparable with the depth of the water column within which they propagate. In all of the above environments, the waves play an important role in facilitating vertical mixing within the water column and, in some cases in the ocean they represent significant threats to the integrity of offshore platforms and installations.

Laboratory and numerical model studies will be described in which the structure and stability of the waves have been investigated and the effects of bottom topography upon these properties have been determined. Particular attention has been directed at the occurrence and consequences of wave breaking at ridges and sloping bottom boundaries.