SCIENCE
to shape the world
C. R. Stelck Chair in Petroleum Geology
BUILDING ALBERTA’S ENERGY LEADERSHIP

“Everybody else was drilling blind, but we were actually looking for the reefs. That was how we found the Leduc deposits.”

— Dr. Charlie Stelck

The University of Alberta has led the exploration and development of the Province’s and Canada’s northern Territories for 100 years. Dr. Charles Stelck, now Professor Emeriti with the University of Alberta, is one of Alberta’s founding fathers and his legacy lives on in the research supported by the C. R. Stelck Chair in Petroleum Geology.

• Logan Medal, Geological Association of Canada (1982)
• Fellow, Royal Society of Canada (1960)
• Order of Canada (1997)
• Inductee Petroleum Hall of Fame (2005)

“Charlie Stelck has dedicated himself to Alberta for the past 50 years—creating a legacy as a professional geologist, a highly accomplished researcher and as an inspiring teacher. His leadership in oil and gas discovery is based on investigating stratigraphic facies, palaeogeography and biostratigraphy in hydrocarbon exploration and exploitation. Stelck has pioneered some of Alberta’s most important discoveries—from his early field work on the wartime Canol Project in the Norman Wells and Upper Peel River areas of the Northwest Territories to his discovery of the Fort St. John and Monkman Pass gas fields.”

— Dr. George Pemberton,
Distinguished University Professor,
University of Alberta

Charlie is recognized for his humanity, integrity, enthusiasm
Stelck’s early research had the romantic character of hardened adventuring in Canada’s most forbidding landscapes. In his pursuit of evidence to support his theory that coral reefs had once occurred in what is now the Arctic—which would mean that there might also be oil—he took a dog team out in the mountains of Norman Wells and found there had been a reef there. “In those days, we didn’t know of continental drift, so it was quite a shock for everybody to realize that a reef had existed there.”

In addition to his work as a research leader, Stelck also taught for almost thirty-five years, guiding many of his students into iconic discoveries of their own.

His pioneering fossil research in western Canada led to his students’ discovery of Alberta’s massive oil reserves. Doug Layer, a former student of Stelck’s, was instrumental in the discovery of oil in Devon (Leduc No. 1) a half-century ago, sparking Alberta’s oil rush.

Later, Stelck’s former students Arne Nielsen and Tony Mason discovered the Pembina oil field—the largest pool of oil in Canada. Nielsen later went on to become president of Mobil Oil.

After Leduc was discovered, the Geological Survey of Canada discontinued identifying fossils outside of their own collections. Drs. P.S. Warren and Stelck took on a large part of the chore for Alberta’s oil companies. They identified more than 50,000 fossils each year for a decade, dating many of the significant discoveries during this period. Most of this work was conducted free of charge.

What opportunities lay ahead?
With the endowment of the Stelck Chair, this icon of Canadian geology will continue to make an impact for decades to come. Fulfilling the endowment for this Chair will help to ensure the leadership role the University of Alberta has established in the field of Petroleum Geology. This area is one of the essential elements in the University’s plan to maintain national and international recognition as one of Canada’s finest innovative research-intensive institutions.

His enduring legacy is his inspired graduates.
The future of Alberta’s energy industry lies in non-conventional reservoirs such as oil sands, low permeable gas plays, gas mudstone plays and coal bed methane. Under Dr. George Pemberton’s guidance, the research program of the C.R. Stelck Chair in Petroleum Geology will continue to optimize Alberta’s most valuable resource in innovative ways. This ongoing research will provide vital knowledge about the predictability of the variations in reservoir quality embedded in the stratigraphic context and can be used to predict sweet spots in time and space.

**Research Framework:**
Pemberton will continue to push boundaries, researching unconventional plays and the impacts on exploration and development. A developing play in North America and around the world revolves around low permeability gas-prone non-associated reservoirs. There are several myths associated with these types of reservoirs. The research will dispel two myths and show that:

1. **A stratigraphic framework** exists which can be mapped, leading to identification of sweet spots and in turn outlining fractional drilling zones, ultimately resulting in greater productivity.

2. **Bioturbation is prevalent** and plays a prominent role in both recognizing the stratigraphic framework and in the reservoir dynamics for the exploitation of the reserves. The implications of such understanding are far-reaching, particularly pertaining to calculations of reserves and deliverability. Bioturbation may also aid in propagating artificial fracture patterns thereby liberating more gas for production.

“For almost three generations, Dr. Charlie Stelck has been an inspirational teacher, guide, mentor and friend to hundreds of Alberta oil finders, many of whom have been his students. His contributions to the geology of western Canada are legendary. In the classroom, in the lab and in the field, his quiet passion for all things geological is infectious. Now in his nineties, with the help of his little friends, the fossils he loves, he continues his life work of sorting out the stratigraphy of the Western Canada Sedimentary Basin.”

Dr. Gordon Williams, P. Geol. (awarded the first PhD in Geology from the U of A in 1960)

Please consider supporting this important legacy.

For further information on investing in the Stelck Chair or other Faculty of Science opportunities, please contact:

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