

**Short CV of  
Professor Zoltan Hajnal, Ph.D.**

**Education and Degrees:**

Ph.D.1970, University of Manitoba, Department of Earth Sciences, Geophysics (Seismology),  
Manitoba, Canada

M.Sc.1963, University of Saskatchewan, Department of Geological Sciences, Geophysics  
(Paleomagnetism), Saskatchewan, Canada

B.E.1960, University of Saskatchewan, College of Engineering, Geological Sciences,  
Geophysics, Saskatchewan, Canada, (Gravity)

**Positions Held:**

1963-1965, Exploration Geophysicists, Chevron Standard Ltd., (The California Standard Co.),  
Calgary, Alberta, Canada

1965-1970, Lecturer, Research Associates, University of Manitoba, Department of Earth  
Sciences, Manitoba, Canada

1970- 1973, Assistant Professor, University of Saskatchewan Department of Geological  
Sciences, Saskatchewan, Canada

1973-1979, Tenured, Associate Professor, University of Saskatchewan, Department of  
Geological Sciences, Saskatchewan, Canada

1976-1977, Visiting Professor, ETH, Zurich, Switzerland; University of Hawaii, Honolulu, USA

1982-1983, Visiting Professor, University of Karlsruhe, Karlsruhe, Germany

1990-1991, Visiting Professor, British Geological Survey, Edinburgh, Scotland; Eotvos  
Geophysical Institute, Budapest, Hungary

1997-1998, Visiting Professor, University of Calgary, Calgary, Alberta; University of Kiel, Kiel,  
Germany; CSIC, Barcelona, Spain

1979-2001, Tenured, Professor, University of Saskatchewan, Department of Geological  
Sciences, Saskatchewan, Canada

2001- Present, Professor Emeritus, University of Saskatchewan, Saskatchewan, Canada

**Areas of Expertise:**

Implementation of seismic methods in structural complex, old-hard-rock environments;  
advanced signal processing; integrated analysis of geophysical geochemical and geological data;  
determination of seismic signal attributes as primary indicators of alterations and zones of  
mineralization, determination of alteration zones from full-wave seismic and optical tele-viewer  
borehole data

**Awards and Fellowships:**

J. Tuzo Wilson Medal, outstanding contribution to geophysics, Canadian Geophysical Union,  
2013

Meritorious Service Award, Canadian Geophysical Union, 2010

Geosciences Honor Roll Award, Saskatchewan Geological Society, 2007

Member of the Hungarian Academy of Sciences, 2001

Honorary Life -Time Member of the Hungarian Geophysical Society, 2001

Honorary Life -Time Member of the Canadian Society of Exploration Geophysics, 1996

Advanced Digital Signal Processing Fellowship Massachusetts Institute of Technology, 1977

### **Research Publications from Refereed Journals**

**(Over 120 total: A few selected from recent years are provided here):**

Hajnal, Z., White, D. J., Takacs, E., Gyorfi, I., Annesley, I. R., Wood, G., C. O'Dowd, and G. Nimeck, 2010, Application of modern 2-D and 3-D seismic- reflections in the Athabasca Basin, Can. J. Earth Sci., 47: 1-22.

Hajnal, Z., E. Takacs, D. J. White, I. Gyorfi, B. Powell R. Koch, 2007, Regional seismic signature of the basement and the crust beneath the McArthur River mine district, Athabasca Basin, Saskatchewan, in EXTECH IV: Geology and Uranium Exploration Technology of the Proterozoic Athabasca Basin, Saskatchewan and Alberta, Edit. C. W. Jefferson, and G. Delaney; GSC Bull. 588; SGS Special Pub. 18; GAC (Mineral Deposits Division) Special Pub. 4; 389-396.

Gyorfi, I., Z. Hajnal, 2010, Seismic methods in Uranium exploration, A case study from McArthur River, Saskatchewan, Canada, Lambert Academic Publishing, pp206.

Gyorfi, I., Z. Hajnal, D. J. White, E. Takacs, B. Reilkoff, I. R. Annesley, B. Powell and R. Koch, 2007, High resolution seismic survey from the McArthur River region; contributions to mapping the complex P2 uranium ore zone, Athabasca Basin Saskatchewan, in EXTECH IV: Geology and Uranium Exploration Technology of the Proterozoic Athabasca Basin, Saskatchewan and Alberta, Edit. C. W. Jefferson, and G. Delaney; GSC Bull. 588; SGS Special Pub. 18; GAC (Mineral Deposits Division) Special Pub. 4; 397-412.

D. J. White, Z. Hajnal, B. Roberts, I. Gyorfi, B. Reilkoff, G. Bellefleur, C. Mueller, S. Woelz, C. J. Mwenifumbo, E. Takacs, D. R. Smitt, D. Brisbin, C. W. Jefferson, R. Koch, B. Powell and I. R. Annesley, 2007, Seismic methods for uranium exploration: an overview of EXTECH IV seismic studies at the McArthur mining camp Athabasca Basin, Saskatchewan, in EXTECH IV: Geology and Uranium Exploration Technology of the Proterozoic Athabasca Basin, Saskatchewan and Alberta, Edit. C. W. Jefferson, and G. Delaney; GSC Bull. 588; SGS Special Pub. 18; GAC (Mineral Deposits Division) Special Pub. 4; 363-395.

Posgay, Bodoky, T., Hajnal, Z., M. Toth, T., Fancsik, T., Hegedus, E., Kovacs, A. C. and Takacs, E., 2006, Interpretation of subhorizontal crustal reflections by metamorphic and rheologic effects in eastern part of the Pannonian Basin, Geophysical Journal International, 167, 187-203.

Hajnal, Z., K. M. Ansdell and K. E. Ashton, 2005, Introduction to special issue of Canadian Journal of Earth Sciences: The Trans-Hudson Orogen Transect of Lithoprobe, Canadian Journal of Earth Sciences, 42, 379-383.

Hajnal, Z., J. Lewry, D. White, K. Ashton, R. Clowes, M. Stauffer, I. Gyorfi and E. Takacs. 2005, The Sask Craton and Hearne Province margin: seismic reflection studies in the western Trans-Hudson Orogen, Canadian Journal of Earth Sciences, 42, 403-419.

White, D. J., M. D. Thomas, A.G., Jones, J. Hope, B. Nemeth and Z. Hajnal, 2005, Geophysical transect across a Paleoproterozoic continent-continent collision zone: The Trans-Hudson Orogen, 2005, Canadian Journal of Earth Sciences, 42, 385-402.

Corrigan, D., Z. Hajnal, B. Nemeth and S. B. Lucas, 2005, Tectonic framework of a Paleoproterozoic arc-continent to continent-continent collision zone, Trans-Hudson Orogen, from geological and seismic reflection studies, Canadian Journal of Earth Sciences, 42, 412-434.

**SHORT Resume of  
Professor Zoltan Hajnal, Ph.D.**

**Current University Position:**

Professor Emeritus, Head of Seismic Laboratory, Department of Geological Sciences, University of Saskatchewan (U of S), Saskatoon, Saskatchewan, Canada

**Research Interests:**

My principal research activities center on seismic reflection and refraction studies of the lithosphere of the Earth, including sediments, crust and the upper mantle. This involvement includes acquisition, processing, interpretation and synthesis of near-vertical incident multichannel reflection data, to delineate deep structural characteristics of the crust. The program successfully imaged the previously unknown lithosphere beneath the Saskatchewan-Manitoba segment of the Canadian Landmass. More specifically a discovery was made of a diamondiferous micro-continent (Sask Craton) and several anomalous properties of the continent wide Trans-Hudson Orogen. An economically significant component is a high resolution 2D/3D reflection study which intends to develop dedicated data acquisition and signal enhancement procedures for the application of the reflection method for mining exploration in Paleoproterozoic sedimentary basins. Current research also includes a major regional reflection investigation of a segment of the sedimentary fill of the intracratonic Williston Basin. The intention is to define the structural setting and the petrophysical properties of a targeted 3D volume of the sedimentary strata which is considered for the long-term storage potential of CO<sub>2</sub> contaminants.

An ongoing research project is the international study of the lithosphere in Central Europe. Through the collaboration of 16 countries, the data acquisitions are now extended from the Baltic to the Mediterranean and Black seas. Analysis of the data sets from the Pannonian Basin of Hungary established novel methodologies to study the lithosphere in that complex tectonic environment. The investigation included supervision of 7 Ph.D., 17 M.Sc. and 4 Post-Doctoral Fellows.

**IUGG Related Activities:**

Chair of the Canadian National Committee for IUGG (CNC/IUGG), 2008- to present  
Member of the IUGG Finance Committee 2011-2015

**Other Leadership Positions:**

Co-Transect- Transect Leader, Trans-Hudson Orogen, of the Canadian Nation LITHOPROBE  
Project 1990-2003  
President, Canadian Geophysical Union 1981-1983