

Curriculum Vitae

C. Willem Langenberg
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EDUCATION

PhD 1972, University of Amsterdam (Structural Geology)
 MSc 1969, University of Amsterdam (Structural Geology and Petrology)
 BSc 1966, University of Amsterdam (Geology)

Dissertation:

Polyphase deformation in the eastern Sierra de los Filabres, south-eastern Spain. Published in GUA Papers of Geology, Series 1, No. 2, (1972). Advisors: Professor C.G. Egeler, Dr. H.E. Rondeel, Dr. I.S. Oen.

SUMMARY OF EXPERIENCE

A long-standing career in structural geology, with emphasis during the last forty years on geohazards and economic geology (including energy and mineral resources).

2009-19 Adjunct Professor, University of Alberta. EarthTime dating project in cooperation with VU University Amsterdam. Geology of the Edmonton area. Established Crowsnest Geological Research Consortium. Published John Allan photo book. Associate Editorship with Journal of Marine and Petroleum Geology. Developed Geothermal Energy program for Canadian Energy Museum.

2009-15 Long Mountain Research Inc. Consulting in Coal and Mineral resources. CSPG Field trips to Turtle Mountain.

1996-09 Alberta Resources Conservation Board. Geohazards related to Turtle Mountain. Geological setting of kimberlites in Alberta. Alberta's coalbed methane (CBM) resources. Geometry of channels in the Athabasca Oil-sands. The new Geological Map of Alberta. Invited lecturer in Utrecht (Netherlands) and Granada (Spain).

1995-96 Alberta Department of Energy. Developing programs in the new home of the Alberta Geological Survey.

1992-95 Alberta Research Council: Evaluation of the economic mineral potential of NE Alberta. Mapping and energy resources evaluation of the Foothills (83F/2) map sheet. Glaciotectonism in east-central Alberta. Field trips coordinator for GAC/MAC annual meeting 93. Editor of 'Edmonton beneath our Feet'.

1989-92 Alberta Research Council: Mapping of the coal resources of the Cadomin (83F/3) map sheet. Analysis of optical anisotropy in coal. Evaluation of the coal-bed methane resources of the Foothills. Coordinator and lecturer of a coal-bed methane short course. Invited lecturer in Amsterdam. Associate Editor of the Bulletin of the Geological Society of America. President of the Edmonton Geological Society.

1986-89 Alberta Research Council: Evaluation of coal quality in Foothills and Mountains. Development of structural models for the prediction of coal quality. Invited lecturer at a Penrose conference in New York.

Summer 85 ETH University, Zurich, Switzerland: Academic guest. Construction of cross-sections through the Morcles nappe.

1981-86 Alberta Research Council: Mapping in Smoky River Coal Field. Establishment of a deformation model, which resulted in new coal reserves. Development of a model for conical folds. Analysis of glaciotectionic deformation at Highvale coal mine. Co-chairman of third Canadian Tectonics Group Meeting. External examiner at the University of Alberta. Invited lecturer in Zurich and Toulouse.

1975-81 Alberta Research Council: Mapping in north-eastern Alberta in cooperation with Dr. J.D. Godfrey. Determination of rock geometry. Framework of deformation and metamorphism. Fracture analysis. Developed ideas for 5-year plan for the Alberta Geological Survey.

1973-75 University of Alberta: Numerical methods in Structural Geology. Development of a model for cylindrical folding. Analysis of macroscopic folds in Canadian Rockies and Belgian Ardennes. Teaching of Introductory Geology and field schools in Jasper.

Summer73 Mapping in northern Saskatchewan for the Saskatchewan Geological Survey. Evaluation of the economic potential of two iron deposits.

1972-73 Mapping in Spain for the Spanish Geological Survey. Assisting in map production.

1966-72 University of Amsterdam (Netherlands): Mapping in south-eastern Spain. Establishment of a succession of deformation phases. Relating deformation to metamorphism. Teaching of Introductory Structural Geology and field schools in Belgian Ardennes. President of the Amsterdam Geological Society.

EMPLOYMENT HISTORY

2009-19 EAS/University of Alberta: Adjunct Professor
 2009-15 Long Mountain Research Inc.: President
 1996-09 Alberta Energy Conservation Board: Senior Geologist.
 1995-96 Alberta Department of Energy: Senior Geologist.
 1992-95 Alberta Research Council: Senior Research Officer.
 1981-92 Alberta Research Council: Associate Research Officer.
 1976 and 79 University of Alberta: Sessional lecturer.
 1978-81 Alberta Research Council: Assistant Research Officer.
 1975-78 Alberta Research Council: Contract Researcher.
 1973-75 University of Alberta: Post-doctoral fellow.
 1972-73 Spanish Geological Survey: Contractor.
 1970-72 University of Amsterdam: Research assistant.

PROFESSIONAL MEMBERSHIPS

Association of Prof. Engineers, Geologists and Geophysicists of Alberta

Geological Association of Canada
 Geological Society of America
 Canadian Society of Petroleum Geologists
 Royal Dutch Geology and Mining Association

PROFESSIONAL ACTIVITIES

1991-95 Associate Editor of Bulletin of the Geological Society of America
 1991-93 Fieldtrip coordinator GAC/MAC 93
 1991-92 President Edmonton Geological Society
 1993-03 Publication manager of the Edmonton Geological Society
 2005-06 Chairman Canadian Tectonics Group
 2010-18 Assistant Publication manager of the Edmonton Geological Society
 2013-16 Associate Editor of the Journal of Marine and Petroleum Geology

AWARDS

Royal Dutch Geology and Mining Association Research Award
 NSERC post-doctoral fellowship

OTHER ACTIVITIES

1976-06 Coach of the Edmonton Speed Skating Club
 1991-98 Race Director of the Edmonton Winter Triathlon
 1990-15 Board member of the Silver Skate Festival Society
 2008-13 President of the Silver Skate Festival Society

TEACHING INTERESTS

1. Structural Geology.
2. Coal and Unconventional Petroleum Geology.
3. Numerical methods in Structural Geology, including statistical procedures and down-plunge cross section techniques
4. Field schools and methods
5. Introductory Geology
6. Geothermal Energy
7. Climate Change

Notice that I have teaching experience in coal-bed methane short courses, Introductory Geology and field schools.

RESEARCH INTERESTS

1. Evolution of the Rocky Mountain fold-and-thrust belt, using data from outcrop, drill holes and geophysical surveys.
2. Structural history of coal-bearing strata and petroleum reservoirs.
3. Dating bentonites in sedimentary rocks.
4. Maturation history of the Western Canadian Sedimentary Basin using vitrinite reflectance data.
5. Geometry of conical folds.
6. Relationship between tectonic strain and vitrinite reflectance anisotropy.
7. Glaciotectonism in the western Canadian Plains.
8. Potential for diamonds in Alberta.
9. Sustainable development of mineral resources of western Alberta.
10. The aesthetics of fold and thrust structures.

SELECTED PUBLICATIONS

- Langenberg, W. and Cruden, D. (2014): John Allan: the Founding of Alberta's Energy Industries. Edmonton Geological Society, 85 pages.
- Pedrazzini, A., Jaboyedoff, M., Froese, C., Langenberg, C.W. and Moreno, F. (2011): Structural analysis of Turtle Mountain: origin and influence of fractures in the development of rock slope failures. In: Jaboyedoff, M. (ed.) Slope Tectonics. Geological Society, London, Special Publications, 351, pp.163–183.
- Langenberg, C.W. (2010): Energy, at what cost: Is \$15 Billion per year enough to bury Alberta's Carbon Footprint? Abstract, GeoCanada 2010, Calgary, Alberta, May 14 & 15, 2010:
- Langenberg, C.W., Pedrazzini, A., Jaboyedoff, M. and Hartel, T.H.D. (2010): Fracture Analysis and Use of LiDAR, Turtle Mountain, Alberta. Abstract, GeoCanada 2010, Calgary, Alberta, May 14 & 15, 2010:
- Isaac, J.H., Lawton, D.C. and Langenberg, C.W. (2008): Seismic imaging of the Turtle Mountain structure, southwestern Alberta, Canada. Bulletin of Canadian Petroleum Geology, v.56, pp.199-208.
- Langenberg, C.W.; Berhane, H.; Sweet, A.R.; Marchioni, D.; Heaman, L.M. (2007): Regional Correlations of the Ardley Coal Zone, Alberta. EUB/AGS Earth Sciences Report 2007-05, 26 p.
- Langenberg, C.W., Pana, D., Richards, B.C., Spratt, D.A. and Lamb, M.A. (2007): Structural Geology of Turtle Mountain area near Frank, Alberta; Alberta Energy and Utilities Board, EUB/AGS Earth Sciences Report 2007-03, 30 p.
- Langenberg, C.W., Beaton, A. and Berhane, H. (2006): Regional Evaluation of the Coalbed-Methane Potential of the Foothills/Mountains of Alberta, Canada. International Journal of Coal Geology, v.65, pp 114-128.
- Langenberg, C.W., Hein, F.J., Lawton, D. and Cunningham, J. (2002): Seismic modeling of fluvial-estuarine deposits in the Athabasca oil sands using ray-tracing techniques, Steepbank River area, northeastern Alberta; Bulletin of Canadian Petroleum Geology, v.50, pp.178-204.