

# Curriculum Vitae

**Name:** Paul William John GLOVER  
Ph.D., M.Sc., B.Sc.(Hons), ARCS

**Current post:** Professor of Petrophysics

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**DOB:** 27<sup>th</sup> February 1963 **Nationality:** British

**Family Situation:** Married **Languages:** English, French, German (3 yrs), Japanese (3 yrs)

## Executive Summary

- **Experience:** 24 years experience; 19 years in 5 universities and 3 continents, 11 years in oil industry posts.
- **Research orientation:** Petrophysics, Reservoir characterisation, fluid flow and rock mechanics.
- **Research profile:** Fully trained petrophysicist. Extensive experience with all types of rock physics and rock mechanics techniques including routine and special core analysis, and all core-flooding methods. Particular focus on electrical methods and theoretical petrophysics. Full experience with the theory and practice of down-hole logging and exploration geophysics.
- **Research students:** 50 funded research students and postdocs from 16 countries since 1993.
- **Funding:** >\$2.3M research funding since 2000.
- **Publications:** 355 research contributions (66 in high quality peer-reviewed journals).
- **Teaching:** 24 years of experience with 99 course.years given; covering petroleum geology, reservoir flow and characterisation, geophysics, petrophysics, geostatistics and scientific communication to academia and industry. Experience developing distance learning courses delivered by the web.
- **University administration:** Experience as MSc and BSc degree coordinator as well as a member of teaching committees, and faculty committees. Experience since 1992 in under-graduate and post-graduate candidate selection, training, advice, and examination.
- **Management:** Experience managing significant research groups, including aspects of safety, personnel, resources, project management, technology transfer and the management of IT infrastructure. Health & Safety management at a departmental level including COSHH administration.
- **Links with industry:** Non-executive director of Gastem Inc. (Canadian E&P junior, 6 years), BP (5 years), Hydro-Québec, Well Performance Technology & UK NIREX (consultancy).
- **International collaboration:** Active and productive collaborative links worldwide, exemplified by 35% of peer reviewed publications containing overseas contributors.
- **International reputation:** Believed to be excellent globally: founding President of the *Energy, Resources and the Environment* Division of the European Geosciences Union (then EGS), and former member of the EGS General Council.
- **Communication:** 28 newsmidia communications since 2004.

## Education

From	To	Institution	Qualification
1985	1988	University of East Anglia, UK	PhD, Experimental Geophysics, 1989
1984	1985	University of Newcastle upon Tyne, UK	MSc, Geophysics and Planetary Physics, 1985
1980	1984	Imperial College of Science and Technology, University of London, UK	BSc, Physics & Geophysics, 1984
1980	1984	Royal College of Science, London, UK	ARCS, 1984
1974	1980	Handsworth Grammar School, UK	12 GCE 'O' Levels (6 grade A), 5 'A' Levels (3A, B, D), Governors' Scholarship, 1981.

## Professional Career

From	To	Post	Employer
12/05/02	present	Professeur (agrégé) de Pétrophysique <i>Department of Geology and Engineering Geology</i>	Université Laval, Canada
01/01/03	present	Company director (non-executive)	Gastem Inc.
09/07/01	10/04/02	Professeur Invité <i>Institut des Sciences de la Terre, de l'Environnement et de l'Espace</i>	Université Montpellier II (Laboratoire de Tectonophysique & ISTEEM), France
01/10/01	19/01/02	Senior lecturer in petrophysics. Director of AU Petrophysics Lab. <i>Department of Geology and Petroleum Geology</i>	University of Aberdeen, UK
20/01/97	01/10/01	Lecturer in petrophysics and Director of AU Petrophysics Laboratory <i>Department of Geology and Petroleum Geology</i>	University of Aberdeen, UK
01/07/95	31/12/96	Senior Research Fellow/Fluid Flow. <i>Department of Flow in Geomaterials</i>	Institute of Fluid Sciences, Tohoku University, Japan.
01/03/95	15/06/95	Petrophysics Consultant	Independent Geophysical Consultant working for BP and WPT.
01/03/92	28/02/95	NERC Postdoctoral Research Fellow <i>Department of Earth Sciences</i>	University College London, UK
01/01/91	06/03/92	Lead Petroleum Engineer Grade 9 <i>Geology and Exploration Department</i>	British Petroleum Research Centre, Sunbury-on-Thames, UK
01/11/88	01/01/91	Petroleum Engineer Grade 7 <i>Geology and Exploration Department</i>	British Petroleum Research Centre, Sunbury-on-Thames, UK
01/09/87	01/05/88	Part-time Lecturer <i>Department of Environmental Sciences</i>	University of East Anglia, UK

## Research Orientation

- The electrical, hydraulic, mechanical and micro-structural properties of rocks, paying particular attention to the physical processes involved.
- Fluid flow in porous and fractured reservoirs by experiment, modelling and field measurements.
- Application of reservoir fluid flow to gas and oil exploitation, geothermal and water resources and the transport and remediation of dissolved chemically toxic and radioactive contaminants in aquifers.
- The use of the electro-kinetic behaviour of rocks and surface conduction to predict reservoir water saturation and permeability.
- The use of the electro-kinetic behaviour of rocks to monitor fluid flow in reservoirs remotely.
- Shale gas.
- Sub-surface sequestration of carbon dioxide.
- Development of new laboratory petrophysical and downhole logging techniques.
- Development of a modern petrophysical theory.
- Integration of laboratory, borehole, production engineering, seismic data and field measurements for improved reservoir characterisation.
- Causes of high electrical conductivity in the lower continental crust and implications for the petrology and structure of the continental crust.
- The role of rock properties in understanding anthropogenic perturbations to the environment.
- The application of electro-kinetic processes to earthquake mechanisms and fluid flow near volcanoes.
- Archaeometry.

## Publications

### Please see the full Publications List

A full list of publications is at <http://www2.ggl.ulaval.ca/personnel/paglover/Publications.htm>

A full list of conferences organised is at <http://www2.ggl.ulaval.ca/personnel/paglover/Conferences.htm>

A full list of posters/presentations given is at <http://www2.ggl.ulaval.ca/personnel/paglover/Presentations.htm>

Many of the abstracts, posters, papers and powerpoint presentations are available to download directly.

Number of articles	Type of publication or communication
1	Editorships
70	66 peer-reviewed publications in high quality journals and 4 more soon to be submitted.
16	Conference sessions convened or conferences organised.
123	Presentations at conferences and symposia.
110	Published and referenceable abstracts.
4	Special editorships, guest editorships, books etc.
30	Miscellaneous, including commercial reports.
<b>354</b>	<b>TOTAL</b>

## Research Supervision

Student	Date	Level	Subject
J. Ghaoui	2011-2012	BSc <i>Lead supervisor</i>	<b>Reservoir fluid flow:</b> The frequency-dependent streaming potential of disaggregated reservoir materials.
J.L. Déziel	2011-2012	BSc <i>Lead supervisor</i>	<b>Gas flow:</b> Modelling the flow of radon caused by permafrost melt.
D.H. Ahmat	2009-2011	MSc <i>Sole supervisor</i>	<b>Shale gas:</b> Shale gas potential of the St Lawrence lowlands.
G. Auger	2010-2011	BSc <i>Lead supervisor</i>	<b>Reservoir fluid flow:</b> Measurement of the frequency-dependent streaming potential of reservoir rocks.
E. Tardif	2008-2010	MSc <i>Co-supervisor</i>	<b>Reservoir fluid flow:</b> Frequency dependent electro-kinetic properties of rocks.
G. Cyr	2008-2010	BSc <i>Sole supervisor</i>	<b>Seismology:</b> Electro-kinetics and synthetic earthquakes.
G. Lalande	2008-2009	BSc <i>Co-supervisor</i>	<b>Reservoir fluid flow:</b> Frequency dependent electro-kinetic properties of rocks.
M. Al Jafaar	2005-2009	PhD <i>External</i>	<b>Reservoir fluid flow:</b> Measurement of streaming potential for oilfield monitoring in intelligent wells.
E. Walker	2006-2009	PhD <i>Lead supervisor</i>	<b>Reservoir fluid flow:</b> The impedance and electro-kinetic properties of porous and fractured geological media.
M. Jodouin	2007-2008	BSc <i>Co-supervisor</i>	<b>Reservoir fluid flow:</b> Frequency dependent electro-kinetic properties of rocks.
N. Déry	2004-2008	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Impedance spectroscopy of reservoir rocks & glass-beads: Measurement and modelling.
B. Carlier	2007	BSc <i>Co-supervisor</i>	<b>Reservoir structural dynamics:</b> Tectonic modelling of reservoirs using a high speed centrifuge.
G. Handschuh	2007	BSc <i>Co-supervisor</i>	<b>Reservoir structural dynamics:</b> Tectonic modelling of reservoirs using a high speed centrifuge.
M. Blouin	2006-2007	BSc <i>Sole supervisor</i>	<b>Gas flow:</b> Modelling the flow of radon caused by permafrost melt.
M.-C. Bergeron	2004-2005	BSc <i>Sole supervisor</i>	<b>Reservoir fluid flow:</b> Monitoring LNAPL pollution in reservoirs using impedance spectroscopic measurements.
A. Oullet-Simard	2004	BSc <i>Sole supervisor</i>	<b>Reservoir fluid flow:</b> Measurement of complex electrical conductivity of rocks.
F. Einaudi	1999-2004	PhD <i>Co-supervisor</i>	<b>Rock characterisation:</b> Petrophysical properties of rocks from the ODP.
S. Marcil	2002-2003	BSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Development of an AC theory for surface electrical conductivity in rocks.
L.-G. Fortin	2002-2003	BSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Stochastic simulation of porous media.
S. Ogilvie	1999-2002	Postdoc	<b>Reservoir fluid flow:</b> Fluid flow in rough fractures.

		<i>Sole supervisor</i>	
E. Isakov	1999-2002	Postdoc <i>Sole supervisor</i>	<b>Reservoir fluid flow:</b> Fluid flow in rough fractures.
H. Al-Qassab	1999-2002	PhD <i>Sole supervisor</i>	<b>Reservoir modelling:</b> Integrated reservoir modelling.
S. Cuddy	1999-2002	PhD <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Fuzzy logic, neural networks and genetic algorithms for advanced wireline log analysis.
P. Taylor	1997-2002	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Complex electrical properties of partially saturated rocks.
A.D. Andrade	2000-2001	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Predicting porosity and hydrocarbon saturation of rock formations during drilling using genetic algorithms and fuzzy logic.
A. Gower	1999-2000	MSc <i>Lead supervisor</i>	<b>Reservoir characterisation:</b> Analysis and Application of FOIL Functions for predicting Reservoir Properties.
S. Ogilvie	1997-2000	PhD <i>Co-supervisor</i>	<b>Reservoir characterisation:</b> Micro to reservoir scale petrophysical characterisation of deformation bands in porous Permian sandstones, Inner Moray Firth and the southern North Sea.
W. Heelan	1999	BSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Characterisation of materials for the resonance enhanced drilling project.
P. Bormann	1999	BSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> The distinction and characterisation of trough and planar cross-bedding from FMI images.
J. Wojewoda	1998-1999	Postdoc <i>Co-supervisor</i>	<b>Reservoir drilling:</b> Resonance enhanced ultrasonic drilling.
A. Krivstov	1998-1999	Postdoc <i>Co-supervisor</i>	<b>Reservoir drilling:</b> Resonance enhanced ultrasonic drilling.
M. Al-Kharoosi	1998-1999	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Conversion of laboratory capillary pressure data to reservoir conditions.
S. Mamedova	1998-1999	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Permeability prediction in the Andrew field UKCS blocks 16/27&16/28 northern N. Sea.
R. Martin	1998-1999	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Facies and permeability prediction from wireline logs.
K. Frew	1998-1999	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Facies and permeability prediction using fuzzy mathematics Britannia Field, North Sea.
E. Pulcrano	1998-1999	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Quantitative petrophysical evaluation of the porosity system and fluid saturation distribution in the fractured Caledonian granite reservoir at Well 16/03a-11 on the margin of the S.Viking Graben (UK).
G. Bächle	1998-1999	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Geological and petrophysical characterisation of the Lochaline sandstone.
M. Mahtot	1998-1999	PhD <i>Co-supervisor</i>	<b>Reservoir characterisation:</b> The behaviour of Archie's law in porous media.
A. McLellan	1998-1999	MSc	<b>Mining geology:</b> An investigation into the occurrence of

		<i>Co-supervisor</i>	graphite around granite aureoles.
K. Mair	1997-1998	PhD <i>External</i>	<b>Rock mechanics:</b> Experimental studies of fault zone development in a porous sandstone.
G. A.-Blanco	1997-1998	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Lithofacies prediction in the Magnus Field (Northern North Sea).
S. McMahon	1997-1998	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Sand-shale and fluid content discrimination of late Jurassic reservoirs from Block 15/17, UK North Sea.
F. Harrison	1996-1997	PhD <i>Co-supervisor</i>	<b>Reservoir characterisation:</b> Seismic response of variations in sedimentary facies.
T. Coombes	1996-1997	MSc <i>Internal</i>	<b>Reservoir characterisation:</b> Comparative analysis of water saturation models, Dunbar Field, UKCS.
C. Hamblett	1996-1997	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> The effect of diagenesis on porosity and permeability within the Bruce Field, Blocks 9/8a, 9/9a, & 9/9b, UKCS Bruce-Beryl embayment.
L. Kilda	1996-1997	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Petrophysical evaluation of the Vilklyciai and Pociiai Oil Fields, Gargzdai, Lithuania.
I. Al-Zadjali	1996-1997	MSc <i>Sole supervisor</i>	<b>Reservoir characterisation:</b> Comparison of the controls on porosity and permeability of reservoir rock analogues using petrophysical, petrographical and geochemical analysis.
L. Powrie	1996-1997	MSc <i>Co-supervisor</i>	<b>Reservoir characterisation:</b> The prediction of Hg injection capillary pressure from NMR relaxation times.
R. Hikima	1993-1996	PhD <i>Co-supervisor</i>	<b>Reservoir fluid flow:</b> Modelling the effect of shear displacements of rough fractures in rocks on fluid flow.

**Please note:** The BSc students are only listed here if they were supported by a research contract.

### Research Funding since 2000

Date	Funding source	Project	Amount
2012-2013	NSERC Research Tools and Instruments - Category 1	Frequency-dependent electro-kinetic measurements during rock and soil deformation: Essential equipment (pending).	\$167,365
2012-2015	NSERC Discovery Grants (individual)	Hydrocarbon and water reservoir characterisation and remediation using AC and DC electrokinetics: Laboratory measurement and theory.	\$165,000
2011-2013	American Chemical Society Petroleum Research Fund	Determination of reservoir rock properties using electro-kinetic methods (pending).	\$60,000
2012-2012	Imperial Oil	Delineation and monitoring the in situ (bio)remediation of soil impacted by recalcitrant petroleum hydrocarbons using impedance spectroscopy and electrokinetic measurements (pending).	\$50,000
2011-2012	NSERC Research Tools and Instruments - Category 1	Frequency-dependent electro-kinetic measurements during rock and soil deformation: Essential	\$150,000

		equipment.	
2007	NSERC Research Tools and Instruments - Category 1	The measurement and application of electro-kinetic measurements in hydrocarbon-bearing rock fractures.	\$62,100
2006-2008	Schlumberger Information Solutions	Provision of professional software: Interactive Petrophysics.	\$132,678
2006-2010	NSERC Discovery Grants (Individual)	Unification of fluid flow and electrical conduction in rocks and soils.	\$159,000
2006-2008	Schlumberger Information Solutions	Provision of professional software: Interactive Petrophysics.	\$229,254
2003-2005	Paradigm Geophysical Inc.	Provision of professional software: Geolog FE.	\$93,450
2003-2005	Schlumberger Information Solutions	Provision of professional software: Interactive Petrophysics.	\$132,678
2003	NSERC Research Tools and Instruments - Category 1	Impedance spectroscopy of reservoir rocks.	\$77,160
2003-2004	NSERC Discovery Grants (individual)	Unification of fluid flow and electrical conduction in fractured rocks.	\$60,000
2000-2002	NERC, Micro-to-Macro Thematic Programme	The scaling properties of fluid flow through rough fractures.	\$814,341
<b>Total since 2000</b> (including pending)			<b>\$2,353,026</b>

## Teaching - Courses Delivered in Geoscience and Reservoir Engineering

All courses at Université Laval were given in French. Many of the recent courses have dedicated websites or material available on-line. Please see <http://www2.ggl.ulaval.ca/personnel/paglover/Teaching.htm>

Date	Title	Level	Description	Institution
1988	ENV 103 Mathematics for Environmental Scientists	BSc.	Lecturer/course co-ordinator	University of East Anglia
1988	ENV 212 Exploration Geophysical Field Techniques	BSc.	Lecturer	
1988	Computing for Environmental Scientists	BSc.	Lecturer/course co-ordinator	
1988	Undergraduate research projects	BSc.	Research supervisor in geology and geophysics	
1989-1992	Special Core Analysis	Industry	Lecturer/course co-ordinator	British Petroleum Research Centre
1992-1995	B254 Earth Physics	BSc.	Lecturer/course co-ordinator	University College London
1992-1995	Undergraduate research projects	BSc.	Research supervisor in geology, global geophysics and exploration geophysics	
1992-1995	Presenting and Writing Scientific Papers in English	BSc.	Lecturer/course co-ordinator	
1995 - 1997	Presenting and Writing Scientific Papers in English	MSc.	Lecturer/course co-ordinator	Tohoku University, Sendai, Japan

1998 - 2001	Presenting and Writing Scientific Papers in English	BSc. & MSc.	Lecturer/course co-ordinator	University of Aberdeen	
1997 - 2001	GL3503 Petroleum Geology	BSc.			
1997 - 2001	GL4505 Petroleum Geophysics	BSc.			
1997 - 2000	GL4006 Petrophysics and Geological Well Log Interpretation	BSc.			
1997 - 2001	Formation Evaluation & Reservoir Fluid Flow	MSc.			
1997 - 2001	Petrophysics	MSc.			
1997 - 2000	<i>Degree co-ordinator</i>	MSc.			Director of studies
1999 - 2001	<i>Degree co-ordinator</i>	BSc.			Director of studies
<b><i>Recent courses are listed by year with student numbers where available.</i></b>					
2002	• GLG-17523 Global geophysics	BSc.	Lecturer	Université Laval	
2003	• GGL-66565 Petrophysics	MSc. & PhD.	Lecturer/course co-ordinator	Université Laval	
2004	<ul style="list-style-type: none"> <li>• GGL-21436 Research project in industry I</li> <li>• GGL-21544 Research project in industry II</li> <li>• GLG-19683 Research project in industry</li> <li>• GLG-21437 Research project in industry II</li> <li>• GLG-13202 Research project in department</li> <li>• GLG-21441 Research project in department II</li> <li>• GGL-21440 Design in geological engineering II</li> <li>• GGL-10356 Applied geology II</li> <li>• GGL-21438 Techniques and practice in geo-engineering</li> <li>• GGL-66565 Petrophysics</li> </ul>	BSc. BSc. BSc. BSc. BSc. BSc. BSc. BSc. BSc. MSc. & PhD.	Lecturer/course co-ordinator	Université Laval	
2005	<ul style="list-style-type: none"> <li>• GGL-21436 Research project in industry I</li> <li>• GGL-21544 Research project in industry II</li> <li>• GLG-19683 Research project in industry</li> <li>• GLG-21437 Research project in industry II</li> <li>• GLG-13202 Research project in department</li> <li>• GLG-21441 Research</li> </ul>	BSc. BSc. BSc. BSc. BSc. BSc.	Lecturer/course co-ordinator	Université Laval	

	<ul style="list-style-type: none"> <li>project in department II</li> <li>• GGL-21440 Design in geological engineering II</li> <li>• GLG-17523 Global geophysics</li> <li>• GGL-66565 Petrophysics</li> <li>• Research methodology</li> </ul>	<p>BSc.</p> <p>BSc.</p> <p>MSc. &amp; PhD.</p> <p>MSc. &amp; PhD.</p>		
2006	<ul style="list-style-type: none"> <li>• GGL-21436 Research project in industry I</li> <li>• GGL-21544 Research project in industry II</li> <li>• GLG-19683 Research project in industry</li> <li>• GLG-21437 Research project in industry II</li> <li>• GLG-13202 Research project in department</li> <li>• GLG-21441 Research project in department II</li> <li>• GGL-21440 Design in geological engineering II</li> <li>• GLG-17523 Global geophysics</li> <li>• GGL-66565 Petrophysics</li> </ul>	<p>BSc.</p> <p>BSc.</p> <p>BSc.</p> <p>BSc.</p> <p>BSc.</p> <p>BSc.</p> <p>BSc.</p> <p>BSc.</p> <p>MSc. &amp; PhD.</p>	Lecturer/course co-ordinator	Université Laval
2007	<ul style="list-style-type: none"> <li>• GGL-1004 Global geophysics</li> <li>• GGL-2601 Analysis and modelling of natural systems (geostats)</li> <li>• GGL-2700 Geological analysis of well logs</li> <li>• GGL-7451 Petrophysics</li> <li>• GLG-7001 Research methodology</li> </ul>	<p>BSc.</p> <p>68 <i>students</i></p> <p>BSc.</p> <p>58 <i>students</i></p> <p>BSc.</p> <p>6 <i>students</i></p> <p>MSc. &amp; PhD.</p> <p>MSc. &amp; PhD.</p>	Lecturer/course co-ordinator	Université Laval
2008	<ul style="list-style-type: none"> <li>• GGL-1004 Global geophysics</li> <li>• GGL-2601 Analysis and modelling of natural systems (geostats)</li> <li>• GGL-2700 Geological analysis of well logs</li> <li>• GGL-7451 Petrophysics</li> <li>• GLG-7001 Research methodology</li> </ul>	<p>BSc.</p> <p>80 <i>students</i></p> <p>BSc.</p> <p>60 <i>students</i></p> <p>BSc.</p> <p>5 <i>students</i></p> <p>MSc. &amp; PhD.</p> <p>1 <i>student</i></p> <p>MSc. &amp; PhD.</p> <p>2 <i>students</i></p>	Lecturer/course co-ordinator	Université Laval
2009	<ul style="list-style-type: none"> <li>• GGL-1004 Global geophysics</li> <li>• GGL-2602 Applied geophysics</li> <li>• GGL-2700 Geological analysis of well logs</li> <li>• GGL-2601 Analysis and modelling of natural systems (geostats)</li> <li>• GGL-7451 Petrophysics</li> </ul>	<p>BSc.</p> <p>82 <i>students</i></p> <p>BSc.</p> <p>27 <i>students</i></p> <p>BSc.</p> <p>7 <i>students</i></p> <p>BSc.</p> <p>53 <i>students</i></p> <p>MSc. &amp; PhD.</p>	Lecturer/course co-ordinator	Université Laval

2010	<ul style="list-style-type: none"> <li>• GGL-1004 Global geophysics</li> <li>• GGL-2601 Analysis and modelling of natural systems (geostats)</li> <li>• GGL-7451 Petrophysics</li> <li>• GLG-7001 Research methodology</li> </ul>	BSc. 89 students BSc. 66 students MSc. & PhD. 1 student MSc. & PhD. 9 students	Lecturer/course co-ordinator	Université Laval
2011	<ul style="list-style-type: none"> <li>• GGL-1004 Global geophysics</li> <li>• GGL-2601 Analysis and modelling of natural systems (geostats)</li> <li>• GGL-2700 Geological analysis of well logs</li> <li>• GGL-7451 Petrophysics</li> <li>• GLG-7001 Research methodology</li> </ul>	BSc. 98 students BSc. 81 students BSc. 4 students MSc. & PhD. MSc. & PhD. 7 students	Lecturer/course co-ordinator	Université Laval

I have designed GGL-1004 Global geophysics to be given as a distance learning course since 2008. Please access the web site [https://cours.ggl.ulaval.ca/2010a/glg-1004\\_83878](https://cours.ggl.ulaval.ca/2010a/glg-1004_83878) and use the “IDUL” «visiteur» and the “Mot de passe” «visiteur» to have full access to the 2010 site.

## University Administration

Post	Role	Date
BSc degree administrator Aberdeen University	Degree publicity, recruitment, admission, student orientation and course advice, pastoral care and special needs, course administration, course assessment, timetabling and structure, collection of assessment data and graduation. Member of departmental and faculty teaching committees.	1997 - 2000
MSc degree administrator Aberdeen University	Degree publicity, recruitment, admission, student orientation and course advice, pastoral care and special needs, course administration, course assessment, timetabling and structure, collection of assessment data. Member of departmental and faculty teaching committees. Liaison with industry. Assessment and management of industrial bursaries.	1999 - 2001
Chairman of the departmental management committee (UER) Université Laval	This committee is the executive board for the academic department, to which the executive staff (the Head of department) reports. It concerns itself with all aspects of the academic department, and is the highest level at which decisions may be made in the department.	2003-2004
BSc (Geology) Teaching committee Université Laval	Departmental teaching committee for the degree of geology, including recruitment, admission, course administration, course assessment, timetabling and structure.	2007-2011
BSc (Engineering geology) Teaching committee Université Laval	Departmental teaching committee for the degree of geology, including recruitment, admission, course administration, course assessment, timetabling and structure.	2007-2011
Undergraduate Student Research Award Assessment Committee NSERC/ Université Laval	This is a devolved NSERC funding body committee that sits at a faculty level. It judges grant applications and recommends funding.	2008-2010

## Management

Post	Role	Date
Manager of the Université Laval Petrophysics Laboratory	Safety, resource and project management, technology transfer (12 researchers in last 5 yrs).	May 2002 - present
Director of the Aberdeen University Petrophysics Group	Personnel, resource and project management, technology transfer management (10 staff).	1997 - 2001
Ex-manager of the Aberdeen University Petrophysics Laboratory	Safety, resource and project management, technology transfer management (7 staff). Annual budget: approx. 500k GBP pa. incl. salaries.	1997 - 2001
Joint facility manager, CT scanning unit, British Petroleum	Management of IT infrastructure associated with the BP X-Ray tomography scanner	1991 - 1992
Health and Safety Manager, British Petroleum	Health & Safety management of the research group including COSHH administration.	1988 - 1992
Academic roles at University College London, Aberdeen University & Université Laval	Full roles in undergraduate and post-graduate candidate selection, training, advice, and examination as well as teaching committees.	1992 – 1995 1997 – 2001 2002 - present

## Experimental and Engineering Experience

My career progress has seen the design and construction of state of the art apparatuses for making measurements of the physical properties of rocks. The following short list describes the major projects:

- Design, construction and testing of pressure vessels (steel, polymer and composite), leadthroughs and piping systems to generate up to 1 GPa pressure using oil or gas pressure media.
- Design, construction and testing of electrical systems to control and measure pressure, temperature, acoustic, thermal, electrical and electro-kinetic measurements in core experiments.
- Design, construction and testing of all types of core-flooding experiments (water and gas, ambient and reservoir condition, steady state and transient, single phase, two phase and three phase flow).
- Design, construction and testing of reservoir condition fluid flow rigs with saturation monitoring by X-Ray CT and using radioactive absorption.
- Design, implementation, testing and use of software code for use on a Cray XMP supercomputer for modelling fluid flow through rough fractures in rocks.
- Design of software to analyse fluid flow through rough fractures in rocks (available online at <http://www2.ggl.ulaval.ca/personnel/paglover/Software.htm>).
- Design and construction of a rig to carry out imaging and flow measurements on rock fractures in rocks.
- Design, installation and testing of rock mechanics equipment (triaxial, uniaxial and hydrostatic) allowing the measurement of the physical properties of rocks (mechanical, fluid flow, electrical and acoustic) in drained and undrained reservoir rock samples.
- The design, construction, testing and use of a miniature triaxial pressure cell for the deformation of samples containing a window for viewing the sample during deformation.
- General engineering support of a large wind-tunnel at the Institute of Fluid Flow of Tohoku University.
- Design, construction and testing of rigs to allow measurements of impedance spectroscopy and capillary pressure on cores of reservoir rock at reservoir temperatures and pressures.
- Design, construction, testing of a bench-top percussive drilling rig.
- The design, construction, testing and use of basic petrophysics equipment including a high pressure saturation rig, a helium pycnometer, and a nitrogen permeameter.
- Design and construction of a scientific rig to carry out impedance spectroscopy and electro-kinetic

measurements on reservoir rocks and unconsolidated reservoir materials.

- Design, construction and testing of two apparatuses for measuring the electro-kinetic properties of reservoir rocks and unconsolidated materials using an electro-magnetic drive.

The developments are shown at <http://www2.ggl.ulaval.ca/personnel/paglover/Laboratory.htm> were all designed and caused to be made by the applicant.

## Professional Highlights

- 2011 Invitation to head and develop a section within the European Geoscience Union on History, Art and Philosophy in Geosciences (HARP).
- May 2011 NSERC grant obtained (\$165,000).
- May 2010 Principal convener of the EGU Union session entitled **US4** “*History, culture, art and religion in the geosciences.*” in Vienna, as well as the associated public panel and audience discussion. This is an initiative of the applicant aimed at broadening the subjects covered by the EGU annual congress.
- Summer 2009 Gastem/NSERC *distinguished lecture tour of Europe* “Measurements, modelling and applications of the electro-kinetic properties of rocks” Universities in Austria, Hungary, Switzerland, France, Italy and the UK.
- May 2009 Principal convener of two sessions at the annual EGU meeting in Vienna, entitled **MPRG7** “*The Transport Properties of Geomaterials: Theory, Modelling, Measurement, Application and Integration*” and **ERE14** “*Archaeometry: The use of geoscientific techniques to probe the archaeological environment .*”
- June 2009 Co-convener of a session at the joint AGU meeting in Toronto entitled **GA13** “*Integrated and Multi-scale Studies in Petrophysics and Applied Geophysics*”.
- May 2008 Co-convener (with A. Endres) of a session entitled **SS2** “*Rock physics: Tying geophysics to geology.*” at GAC/MAC 2008 Québec, 2008.
- May 2008 Principal convener of a session at the annual EGU meeting in Vienna, entitled **MPRG7** “*The Transport Properties of Geomaterials: Theory, Modelling, Measurement, Application and Integration*”.
- May 2007 Principal convener of a session at the annual EGU meeting in Vienna, entitled **ERE9** “*Archaeometry: The use of geoscientific techniques to probe the archaeological environment .*”
- May 2005 Two large NSERC grants obtained (equipment and research, \$212,100).
- May 2004 Appointed Professor agrégé by Université Laval, Québec (backdated to May 2002)
- May 2002 Appointed to Visiting Professor at Université Laval, Québec.
- 2002-2003 Invited specialist researcher at the Université Montpellier II (ISTEEM, Laboratoire de Tectonophysique), France.
- 2000-2001 Member of the General Council of the European Geophysical Society.
- 2000-2001 Founder and Chairman of the European Geophysical Society initiative and cross-disciplinary working group on Energy, Resources and the Environment.
- April 2001 Principal convener at the European Geophysical Society Congress in Nice in 2001 for the session “**SE4.06: Rheology and properties of the lithosphere, rocks and faults: Micro-to-macro behaviour of rock transport properties**”.
- April 2000 Principal convener at the European Geophysical Society Congress in Nice in 2000 for the session “**SE33: Open Session on the Physical Properties of Geomaterials**”.

- Oct. 1999 Vice-President (without portfolio), Aberdeen Formation Evaluation Society.
- Oct. 1999 NERC Micro-to-Macro grant awarded (\$414,341) for research into the scaling properties of fluid flow through rough rock fractures.
- Oct. 1998 CMPT grant awarded (\$120,000) : Resonance enhanced ultrasonic drilling of rocks.
- Aug. 1998 Vice-President (Publicity), Aberdeen Formation Evaluation Society.
- April 1998 Principal convenor at the European Geophysical Society Congress in Nice for the session “**SE41: Electro-magnetic and Electro-kinetic Properties of Rocks: Integration of Laboratory, Borehole and Field Measurements**”.
- 1997 *Invited lecture tour of Germany.* “Causes of High Electrical Conductivity in the Crust.”
- Dec. 1996 Invited Keynote Speaker at the Fall Meeting of the American Geophysical Union. Subject: “*An Electrical Conductivity Reference Earth Model - Experimental constraints on the electrical conductivity of the crust.*”
- June 1995 Senior Research Fellow, Institute of Fluid Sciences, Tohoku University, Japan, at the invitation of the Japanese Ministry of Science.
- March 1995 Principal convenor at the European Geophysical Society Congress in Hamburg in 1995 for the session “**SE14: Integrated Experimental Measurements and Theoretical Description of Rock Transport Properties**”.
- April 1996 Guest Editor for Surveys in Geophysics special volume on rock transport properties.
- Nov. 1994 Invited Lecturer to the “*Rock Fracture Mechanics and Fractals*” Symposium and Workshop, Tokyo and subsequent lecture tour in Japan.
- 1993-1994 Editor of the proceedings volume of, and co-organiser of the meeting “*Crack Systems in Rocks: Fundamentals and Applications in Crustal Dynamics and Reservoir Engineering*”, with P.G. Meredith, and P.R. Sammonds.
- Dec. 1992 Publication in NATURE of work on the electrical conductivity of fluid saturated graphite bearing rocks under high confining pressures, pore fluid pressures, and temperatures.
- 1991-1992 Joint supervisor of the British Petroleum CT Scanner installation at Sunbury-on-Thames, U.K., with responsibility for computing and image analysis of post-scan data.
- 1990-1992 Lead scientist for British Petroleum in the European Community funded multi-exploration company research project entitled “*Injection de Gaz Non Miscibles dans les Reservoirs Fissurés ou Épais de la Mer du Nord*”, with IFP, TOTAL, CFP, AGIP, ELF Aquitaine, and Petrofina. This involved the supervision of a small team designing, and operating three phase water and gas flooding experiments, together with tri-monthly international meetings of the companies for scientific reporting and research planning.
- 1991 Lead scientist at BP of a small team investigating the feasibility of three phase micro-visualisation by solidification of post-flood fluids.
- 1988-1990 Research Scientist at BP : The electrical properties of core materials at reservoir conditions.
- 1988 Part-time Lecturer at the School of Environmental Sciences, University of East Anglia, U.K., teaching mathematics for scientists, exploration and global geophysics, and computing to undergraduate students.

## Membership of Academic and Professional Bodies

Activity	Responsibility	Dates
Journal, Surveys in Geophysics, Kluwer Academic Press	Member of the Editorial Board	2001 – 2005
Aberdeen Formation Evaluation Society, SPWLA Chapter	Vice-president Ordinary member	1998 – 2001 Since 1997
European Geophysical Society- European Geosciences Union	President of the ERE Division Member of the General Council Chairman of HARP Ordinary member	2000 – 2002 2000 – 2002 From 2012 Since 1987
Society of Exploration Geophysicists	Associate member	Since 2005
EHPRG	Ordinary member	Occ. Since 1987
British HPTA	Ordinary member	Occ. Since 1987
American Geophysical Union	Ordinary member	Since 1990

## Media

I believe that a good academic has a duty to communicate his/her science to the widest possible audience. Here are the most recent contributions made to the general media. Many of the items can be read or heard on my website at <http://www2.ggl.ulaval.ca/personnel/paglover/Press.htm>

Title	Medium	Date	Type
La fonte du pergélisol, une menace pour la santé.	Le Soleil	31/05/2008	Newspaper
Vers un Québec gazier ?	Le Soleil	03/03/2010	
Séquestration du carbone: peu de risques environnementaux, selon les experts.	Le Soleil	18/04/2010	
Marée noire: Désastre à notre démesure.	Le Soleil	18/06/2010	
Marée noire: Il n'y aura pas de solution «propre».	Le Soleil	18/06/2010	
Marée noire: Une richesse qui part en fumée.	Le Soleil	18/06/2010	
Sur le promesses et les périls de l'exploitation du gaz de schiste, entrevue avec Pascale Guéricolas	Au fil des événements	02/09/2010	
Gaz de schiste : quelques «trous» dans la loi actuelle.	Le Soleil	20/09/2010	
Gaz de schiste: sous-sol "propre" dans les basses terres.	Le Soleil	30/09/2010	
Gaz de shale : ce que disent les rapports de forage	Le Soleil	30/09/2010	
Chaleur de fer au centre de la terre	Le Soleil	11/09/2011	
The Haiti earthquake, Interview with Jackie Czernin	CBC Radio 1 - Breakaway	13/01/2010	Radio
The Haiti earthquake and its aftershocks, Interview with Jackie Czernin	CBC Radio 1 - Breakaway	20/01/2010	
The Chile earthquake and its tsunami, Interview with Jackie	CBC Radio 1 -	01/03/2010	

Czernin	Breakaway		
The Deepwater Horizon disaster, Interview with Jackie Czernin	CBC Radio 1 - Breakaway	17/05/2010	
Are the recent global earthquakes chance, or not? Interview with Ian Hamilton	CBC Radio syndication	09/03/2010	
Le gaz de schiste au Québec, Interview with René Bélanger	CIHO FM 96.3 Charlevoix	02/09/2010	
De l'eau dans le gaz (Gaz de schiste), Interview with Janic Tremblay	CBC Radio Canada - Les années lumières	12/09/2010	
Exploitation of the potential Old Harry reservoir, Interview by Hélène Fauteux	CFIM Radio des Iles de la Madeleine	06/10/2010	
The Great Sendai Earthquake and tsunami, Interview with Jackie Czernin	CBC Radio 1 - Breakaway	11/03/2011	
Retour sur le monde, Le récit d'un québécois qui a vécu au Japon, Entrevue avec Diane Martin	Radio Canada, Première Chaîne	11/03/2011	
The Great Sendai Earthquake: Aftershocks and nuclear problems, Interview with Jackie Czernin	CBC Radio 1 - Breakaway	15/03/2011	
The Great Sendai Earthquake and tsunami, Interview with Justin Hayward	CBC National News	11/03/2011	
Discovery of hydrocarbons at Ste. Anne Desmaures	TVA/V-Tele	18/11/2009	
The Great Sendai Earthquake and tsunami, Interview with Mitsumi Takahashi	CTV Montréal midday news	11/03/2011	Television
The Great Sendai Earthquake and tsunami, Interview	Global news	11/03/2011	
The Great Sendai Earthquake and tsunami, Interview	CBC Montréal news	11/03/2011	
The Great Sendai Earthquake and tsunami, Interview with Kai Nagata	CTV Ontario	11/03/2011	