**Dr Philip R. Porter**

**Personal**

Associate Dean Education & Reader in Geoscience & Geoscience Education

Department of Biological and Environmental Sciences

School of Life & Medical Sciences

University of Hertfordshire

**Academic Qualifications**

***Postgraduate Education:***

1993-1996 School of Geography, University of Leeds

*Doctoral thesis*: Glacier surging: subglacial sediment deformation and ice-bed coupling.

 *Ph.D. awarded*: December 1997.

***Undergraduate Education:***

1988-1991 Department of Geography, University of Sheffield

 B.A. (Hons.) Physical Geography.

***Secondary Education:***

1980-1987 Monks Walk School. Welwyn Garden City, Hertfordshire

 3 GCE ‘A’ Levels, 8 GCE ‘O’ Levels

**Academic employment history**

***September 2003-present***

*University of Hertfordshire, School of Life and Medical Sciences*.

*Posts held (both current):* **Associate Dean Education.**

**Reader in Geoscience and Geoscience Education.**

**British Science Association Media Fellow.**

***August 2014-present***

*The University Centre in Svalbard (UNIS)*

*Post held:* **Guest Field Scientist (August) MSc module AG-340 Arctic Glaciers and Melt Season Dynamics.**

***July 2001-May 2002***

*University of Leeds, School of Geography*.

*Post held*: **Research Fellow** (Geography & Environmental Science, and associated research (see below), development and design of Masters level online distance learning courses)

***1997-2000*** *University of Leeds, School of Geography*.

*Post held*: **Temporary Lecturer in Physical Geography.**

***1996-1997*** *University of Manchester, Department of Geography*.

*Post held*: **Temporary Lecturer in Physical Geography.**

***1993-1996 Ph.D.*** *University of Leeds, School of Geography*.

*Post held*: **Ph.D. student** (role of subglacial sediment properties on glacier fast flow).

***1991-1993*** *University of Manchester, Department of Geography*.

*Post held*: **Research/field assistant**, glacial hydrology of Findelngletscher and Gornergletscher.

***1985*** *Department of Trade and Industry, Warren Spring Laboratory*.

*Post held*: **Assistant scientific officer (research)**, modelling liquefaction of ships cargoes.

**Research**

***Principal academic and research interests*:**

* Public engagement with science.
* Arctic, Alpine and Himalayan glacier hydrology.
* Paraglacial geomorphology and sedimentology.
* Glacial and fluvio-glacial sediment dynamics.
* Arctic glacier surging.
* Ecology of deglaciating environments.
* Design and construction of field instrumentation.
* Virtual learning environments in Geography and Environmental Science.

**Publications accepted or published**

Kamintzis, J.E., Irvine-Fynn, T.D.L., Holt, T.O., Jones, J.P.P., **Porter, P.R.**, Jennings, S.J.A., Naegeli, K. and Hubbard, B. 2020. Morphology, flow dynamics and evolution of englacial conduits in cold ice. Invited contribution, E*arth Surface processes and Landforms Special Edition, publication June 2020*.

**Porter, P.R**., Smart, M.J. and Irvine-Fynn, T.D.L., 2018. Glacial sediment stores and their re-working. In: Heckmann, T. and Morche, D. (eds.), *Geomorphology of Alpine Proglacial Areas*. Springer.

Rowan, A.V., Quincey, D.J., Gibson, M.J., Glasser, N.F., Westoby, M.J., Irvine-Fynn, T.D.L, **Porter, P.R.** and Hambrey, M.J. 2018. The sustainability of water resources in High Mountain Asia in the context of recent and future glacier change. *Geological Society Special Publication*, vol. 462.

Kamintzis, J. E., Jones, J. P. P., Irvine-Fynn, T., Holt, T., Bunting, P., Jennings, S. J. A., **Porter, P. R.** & Hubbard, B. 2018. Assessing the applicability of terrestrial laser scanning for mapping englacial conduits. *Journal of Glaciology,* 64, 243, 37-48.

Stevens, I. T., Irvine-Fynn, T., **Porter, P. R.**, Cook, J. M., Edwards, A., Smart, M., Moorman, B. J., Hodson, A. J. & Mitchell, A. 2018. Near-surface hydraulic conductivity of Northern Hemisphere glaciers. *Hydrological Processes*, 32, 850-865.

Irvine-Fynn, T., **Porter, P. R.**, Rowan, A. V., Quincey, D. J., Gibson, M., Bridge, J. W., Watson, C. S. & Glasser, N. 2017. Supraglacial ponds regulate runoff from Himalayan debris-covered glaciers. *Geophysical Research Letters*, 44, (23), 11894-11904

Irvine-Fynn, T.D.L., Hanna, E., Barrand, N.E., **Porter, P.R.**, Kohler, J., Hodson, A.J. 2014. Examination of a physically based, high-resolution, distributed Arctic temperature-index melt model, on Midtre Lovénbreen, Svalbard. *Hydrological Processes*, 28 (1), 134-149.

Cook, S.J., and **Porter, P.R.,** Bendell, C.A., 2013. Geomorphological consequences of glacier advance across a paraglacial rock avalanche deposit. *Geomorphology*, (189), 109-120.

T.D.L, Hanna, E., Hodson, A.J., Barrand, N.E., **Porter, P.R.** and Kohler, J. 2012. Examination of a physically based, high-resolution, distributed Arctic temperature-index melt model, on Midtre Lovénbreen, Svalbard. *Journal of Hydrology*, DOI: 10.1002/hyp.9526.

**Porter, P.R.** 2011. Subglacial borehole instrumentation. In: Singh, V.P., Singh, P. and Haritashya, U.K. (*eds*.) *Encyclopedia of Snow, Ice and Glaciers*, Springer.

Irvine-Fynn, T.D.L., Barrand, N.D., **Porter, P.R.**, Hodson, A.J., and Murray, T. 2011. Recent High-Arctic glacial sediment redistribution: A process perspective using airborne lidar. *Geomorphology*, 125(1), 27-39.

**Porter, P.R.**, Vatne, G., Ng, Felix and Irvine-Fynn, T.D.L., 2010. Ice-marginal sediment delivery to the surface of a High-Arctic glacier: Austre Brøggerbreen, Svalbard. *Geografiska Annaler*, 92(A): 439–451.

Irvine-Fynn, T.D.L, **Porter, P.R**., Barrand, N.E., Benn D.I., Temminghoff, M. and Lukas. S. 2010. High-Arctic glacial-periglacial interactions and the development of terrain morphology on Brøggerhalvøya, Svalbard. *Proceedings of Geo2010: 63rd Canadian Geotechnical and 6th Canadian Permafrost Conferences*, Calgary, AB., Canada: 8pp.

**Porter, P.R., 2010. Getting the best from PowerPoint: 2 and 3-dimensional animations (Part 2). *Blended Learning in Practice*, March 2010, 23-27.**

Curry, A.M., Sands, T.B., and **Porter, P.R**. 2009. Geotechnical controls on a steep lateral moraine undergoing paraglacial slope adjustment. *Geological Society Special Publication*,320, 181-197.

Curry, A.M., **Porter, P.R**., Irvine-Fynn, T.D.L., Rees, G., Sands, T.B., Puttick, J., 2009. **Quantitative particle size, microtextural and outline shape analyses of glacigenic sediment reworked by paraglacial debris flows. *Earth Surface Processes and Landforms*, 34, 1, 48-62.**

**Porter, P.R., 2009. Getting the best from PowerPoint: 2 and 3-dimensional animations. *Blended Learning in Practice*, June 2009, 20-27.**

**Porter, P.R**., Evans, A.J., Hodson, A.J., Lowe, A.T., and Crabtree, M.D. 2008. Sediment-moss interactions on a temperate glacier; Falljökull, Iceland. *Annals of Glaciology*, 48, 25-31.

Irvine-Fynn T.D.L., Hodson A.J., Kohler J., **Porter P.R**., and Vatne G., 2005. Dye tracing experiments at Midre Lovenbreen, Svalbard: preliminary results and interpretations. In: *Glacier Caves and Glacial Karst in High Mountains and Polar Regions*. Ed. B. R. Mavlyudov, Proceedings 7th GLACKIPR Conference, Sept 2005, Azau. Institute of geography of the Russian Academy of Sciences, Moscow, 36-43.

Lowe, A.T., and **Porter, P.R**., 2004. Variability of air temperature lapse rates: preliminary results from the Karakoram Himalaya. *Geophysical Research Abstracts*, Vol. 6, ref: 04441.

Hodson, A.J., **Porter, P.R**.., Lowe, A., and Mumford, P.N., 2002. Chemical denudation and silicate weathering in Himalayan glacier basins: Batura Glacier, Pakistan. *Journal of Hydrology*, 262, 193 - 208.

Woodward, J.C., **Porter, P.R**., Lowe, A.T., Walling, D.E., and Evans, A.J., 2002. Composite suspended sediment particles in glacial meltwaters: preliminary evidence from Alpine and Himalayan basins. *Hydrological Processes*, 16, 1735-1744.

Fischer, U., **Porter, P.R**., Schuler, T., Evans, A.J., and Gudmundsson, H. 2001. Hydraulic and mechanical properties of glacial sediments beneath Unteraargletscher, Switzerland: implications for glacier basal motion. *Hydrological Processes*, 15(18), 3525-3540.

Murray, T. and **Porter, P.R**., 2001. Basal conditions beneath a soft-bedded polythermal surge-type glacier: Bakaninbreen, Svalbard. *Quaternary International*, 86(1), 103-116.

**Porter, P.R**., and Murray, T., 2001. Hydrological and mechanical properties of till beneath Bakaninbreen, Svalbard.

 *Journal of Glaciology*, 47(157), 167-175.

Murray, T., Stuart, G.W., Miller, P.J., Woodward, J., Smith, A.M., **Porter, P.R**., and Jiskoot, H., 2000. Glacier surge propagation by thermal evolution at the bed. *Journal of Geophysical Research*, 105 (B6), 13,491-13,507.

**Porter, P.R**., Murray, T., and Dowdeswell, J.A., 1997. Sediment deformation and basal dynamics beneath a glacier surge-front: Bakaninbreen, Svalbard. *Annals of Glaciology*, 24, 21-26.

**Porter P.R**., Murray, T., and Dowdeswell, J.A., 1997. Sediment properties beneath a glacier surge-front: Bakaninbreen, Svalbard. *EOS*, 78(46), 253.

Murray, T., **Porter, P.R**., and Dowdeswell, J.A., 1997. Geometric evolution and ice dynamics during a surge of Bakaninbreen, Svalbard. *EOS*, 78(46), 244.

Hambrey, M.J., Dowdeswell, J.A., Murray, T., and **Porter, P.R**., 1996. Thrusting and debris entrainment in a surge-type glacier: Bakaninbreen, Svalbard. *Annals of Glaciology,* 22, 241-248.

**Porter, P.R**., and Murray, T., 1995. Bore-hole instruments to measure glacier basal motion. *Working Paper 95/21*, School of Geography, University of Leeds.

McLelland, S.J., Skellern, A.R., and **Porter, P.R**., (Eds.), 1995. *Postgraduate Research in Geomorphology: Selected papers from the 17th B.G.R.G. Postgraduate Symposium*, 101pp.

Murray, T., and **Porter, P.R**., 1994. Conditions at the bed of a high-arctic surging glacier: Bakaninbreen, Svalbard. *EOS*, 75(44), 222.

**Grants awarded**

2019 British Science Association Media fellowship (BBC Radio Science Unit).

2017-19 Route to Market Award, University of Hertfordshire. Three-dimensional virtual learning environments.

2016 Proof of Concept Award, University of Hertfordshire. Three-dimensional virtual learning environments.

2016 University of Hertfordshire ‘skill up’ award. Public engagement with science.

2015 Santander International Collaboration Award (with NTNU Trondheim).

2011 Higher Education Academy Subject Centre Learning and Teaching Development Fund: Student engagement with field research in Geography and Environmental Science.

2011 University of Hertfordshire Student Educational Experience Committee Award: Engaging students with staff research.

2011 University of Hertfordshire Charitable Trust: community engagement with field science.

2010 Higher Education Academy Subject Centre Learning and Teaching Development Fund: Linking teaching and field research.

2009 European Commission (ARCFAC: The European Centre for Arctic Environmental Research): Glacier surface paraglacial sediment delivery and transfer within a High-Arctic glacier basin.

2004 The Nuffield Foundation, awards to newly appointed lecturers: composite suspended sediment dynamics.

2000 Royal Geographical Society Ralph Brown Expedition Award: Karakoram Himalaya Glacier Hydrology Project.

1999 Royal Society Research Grant, basal sediment properties: Unteraargletscher, Switzerland.

1999 Manchester Geographical Society Research Grant: Karakoram Himalaya Glacier Hydrology Project.

1999 University of Leeds, Research Development Fund: Karakoram Himalaya Glacier Hydrology Project.

1997 University of Leeds, Research Development Fund: Paper presentation A.G.U. Fall Meeting, San Francisco.

1997 British Airways Expedition Award: Karakoram Himalaya Glacier Hydrology Project.

1997 Royal Geographical Society, Overseas Scientific Expedition Grant: Karakoram Himalaya Glacier Hydrology Project.

1997 University of Manchester staff travel award: assessment of englacial and basal hydrologic regimes; basal sediment properties: Falljökull, Iceland.

**Conference & Invited Presentations**

Royal Society Manchester Science Festival, October 2016. The Shrinking Glaciers of Everest.

Royal Society Summer Science Festival June 2015. The Shrinking Glaciers of Everest.

International Glaciological Society, International Symposium on Glaciology in High-Mountain Asia, March 2015. *Monitoring ablation and meltwater production from a debris-covered glacier in Nepal*.

American Geophysical Union Fall Meeting, San Francisco, December 2011. *3-dimensional animation technology: a new interactive model designed for the teaching of cryospheric science*.

Queen Mary, University of London, January 2010. **Invited presentation.** *Paraglacial sediment delivery to the surface of a High-Arctic glacier: Austre Brøggerbreen, Svalbard*.

Norwegian Geographical Society annual conference, March 2008. **Invited presentation.** Quantitative SEM analysis of glacigenic sediment reworked by paraglacial debris flows.

Norwegian University of Science and Technology, Trondheim, Norway, April 2008. **Invited presentation.** *Sticking, slipping, surging: field measurement of glacier motion*.

Norwegian University of Science and Technology, Trondheim, Norway, April 2008. **Invited presentation.** *Clean and dirty water: sediments and glacier hydrology*.

International Union of Geodesy and Geophysics XXIV 2007 meeting “Earth, our changing planet”, Perugia Italy, 2-12th July 2007:

1. *Moss-sediment interactions on a temperate glacier: Falljökull, Iceland.*
2. *Contemporary proglacial sediment redistribution in the High-Arctic: a process perspective using airborne lidar.*

British Bryological Society: Bryological Symposium, University of Hertfordshire, 9-10 September 2006. *Bryophyte colonisation on a temperate glacier: Falljökull, Iceland*.

Specialist Schools and Academies Trust Annual Humanities Conference, Bath, 2006*. T-shirts on for an arctic heatwave: fieldwork on the global warming frontline*.

European Geosciences Union (E.G.U.) General Assembly, Nice, 25-30 April, 2004. *Variability of air temperature lapse rates: preliminary results from the Karakoram Himalaya*.

European Geosciences Union (E.G.U.) General Assembly, Nice, 25-29 April, 2000. *Hydraulic and mechanical properties of glacial sediments beneath Unteraargletscher, Switzerland: implications for glacier basal motion*.

American Geophysical Union, fall meeting, San Francisco, 1997. *Sediment properties beneath a glacier surge-front: Bakaninbreen, Svalbard.*

International Glaciological Society, British Branch Meeting, Manchester, 1996. *Sediment properties beneath a surging glacier.*

International Glaciological Society, Changing Glaciers Conference, Fjaerland, Sognefjord, Norway, June 1996. *Sediment deformation and basal dynamics beneath a glacier surge-front: Bakaninbreen, Svalbard*.

International Glaciological Society, British Branch Meeting, Leeds, 1995. *Conditions at the bed of a high Arctic surging glacier; Bakaninbreen, Svalbard*.

Subglacial Working Group, Bridlington, 1994. *Sediment properties beneath a surging glacier*.

International Glaciological Society, British Branch Meeting, Edinburgh, 1994. *Conditions at the bed of a high Arctic surging glacier; Bakaninbreen, Svalbard*.

American Geophysical Union, fall meeting, San Francisco, 1994. *Conditions at the bed of a high-arctic surging glacier: Bakaninbreen, Svalbard*.

British Geomorphological Research Group, 16th Postgraduate Symposium, Glasgow 1994 *Glacier surging: subglacial sediment deformation and ice-bed coupling*.

**Research fieldwork experience**

2019 March, Longyearbreen, Svalbard. Leverhulme Trust funded project (Aberyswyth): Shallow surface Ground Penetrating Radar mapping.

2019 April, Kongsvegen, Svalbard. NERC funded project (St. Andrews): Deep hot water drilling and basal instrument installation-High Arctic glacier surging.

2018 June, Skaftafellsjökull, Iceland. UAV mapping of proglacial glacio-fluvial systems and quantification of sediment fluxes.

2018 March, Kongsvegen, Svalbard. NERC funded project (St. Andrews): Deep hot water drilling and basal instrument installation-High Arctic glacier surging.

2017 August, Aldegondabreen, Svalbard. UNIS AG340 fieldwork.

2017 March, Austre Brøggerbreen, Svalbard. *In situ* laser scanning of internal glacier hydrological system.

2016 August, Aldegondabreen, Svalbard. UNIS AG340 fieldwork.

2016 June, Feegletscher Nord, Switzerland. UAV mapping of proglacial glacio-fluvial systems and quantification of sediment fluxes.

2015 August, Protektorbreen, Svalbard. UNIS AG340 fieldwork.

2014 August, Foxfonna, Svalbard. UNIS AG340 fieldwork.

2012 June-July, Feegletscher Nord, Switzerland. Deglaciation sediment dynamics.

2011 June-July, Feegletscher Nord, Switzerland. Proglacial sediment dynamics.

2010 June-July, Feegletscher Nord, Switzerland. Proglacial lake hazard assessment.

2009 June-July, Feegletscher Nord, Switzerland. Proglacial lake drainage dynamics.

2009 August, Austre Brøggerbreen, Svalbard. Paraglacial sedimentation, supraglacial and englacial hydrology.

2007 August, Austre Brøggerbreen, Svalbard. Paraglacial sedimentation, supraglacial and englacial hydrology.

2005 August, Midre Lovenbreen, Svalbard. Englacial and supraglacial hydrology; surface energy balance modelling; composite suspended sediment particle genesis and dynamics in proglacial streams.

2005 July, Falljökull, Iceland. Composite particle genesis and dynamics in proglacial streams.

2004 August, Midre Lovenbreen, Svalbard. Englacial and supraglacial hydrology; surface energy balance modelling; composite suspended sediment particle genesis and dynamics in proglacial streams.

2004 July, Falljökull, Iceland. Composite particle genesis and dynamics in proglacial streams.

2002 Torcicoda Valley, Sicily. Mapping and Geo-archaeological interpretation of Quaternary Sedimentary sequences.

2001 Glovers Reef, Belize. Visual communication in Caribbean Reef fishes.

2000 Hispar and Biafo Glacier basins, Northern Areas, Pakistan. Karakoram Himalaya Glacier Hydrology Project; interdisciplinary.

1999 Batura and Passu Glacier basins, Northern Areas, Pakistan. Karakoram Himalaya Glacier Hydrology Project; interdisciplinary.

1999 Unteraargletscher, Switzerland. Basal sediment properties, proglacial hydrology.

1997 August, Falljökull, Iceland. Assessment of englacial and basal hydrologic regimes; basal sediment properties.

1996 Bakaninbreen, Svalbard. Ph.D. fieldwork: Glacier surging: subglacial sediment deformation and ice-bed coupling.

1995 Falljökull, Iceland. Assessment of englacial and basal hydrologic regimes, over-winter logger site construction.

1995 Bakaninbreen, Svalbard. Ph.D. fieldwork: Glacier surging: subglacial sediment deformation and ice-bed coupling.

1994 Bakaninbreen, Svalbard. Ph.D. fieldwork: Glacier surging: subglacial sediment deformation and ice-bed coupling.

1993 Gornergletscher and Findelngletscher, Switzerland. Bulk meltwater suspended sediment and solute concentration assessment.

1992 Gornergletscher and Findelngletscher, Switzerland. As above.

1990 Solheimajökull region, Iceland. Proglacial hydrology and hydrochemistry.

**Paper Reviews**

***Reviews undertaken for the following journals:***

Journal of Glaciology, Annals of Glaciology, Quaternary Science Reviews, Earth Surface Processes and Landforms, Hydrological Processes, Journal of Hydrology, Journal of Soils and Sediments.

**Continuing professional development**

2019 British Science Association Media Fellowship (BBC Radio Science Unit).

2018 Various workshops associated with line management responsibilities, University of Hertfordshire.

2017 Plas-y-Brenin National Mountain Sports Centre, rope skills and crevasse rescue.

2010 National Student Survey issues for Geography, Higher Education Academy Subject Centre, University of Manchester.

2006 Mentoring newly appointed staff, University of Hertfordshire.

2006 Teaching fieldwork & creativity in teaching, University of Hertfordshire.

2003 Mentoring, University of Hertfordshire.

2001/2002 Professional Association of Diving Instructors Medic First Aid/Emergency First Response Instructor.

2000 H.S.E. Rescue Emergency Care First Aid Certificate.

2000 Crevasse Rescue, National Mountain Centre, Plas-y-Brenin, Wales.

1999/2000 Guest Scientist, E.T.H. Zurich, Laboratory of Hydraulics, Hydrology and Glaciology.

1999 Effective large group teaching, University of Leeds.

1997 Making successful grant applications, University of Manchester.

1997 Introductory teaching methods, University of Manchester.

1996 First Aid, University of Leeds.

1995 Mountain Safety and Crevasse Rescue, University of Leeds.

1994 Postgraduates as teachers in geography, University of Leeds.

1994 Participatory teaching methods in small groups, University of Leeds.

**Professional affiliations**

Fellow of the Higher Education Academy

Fellow of the Royal Geographical Society

Member of the Royal Geographical Society Accreditation Panel

British Society for Geomorphology

International Glaciological Society

American Geophysical Union

Member of the Oxford Cambridge and RSA Examinations Board Consultative Committee

**Other skills**

Clean U.K. driving licence, Professional Association of Diving Instructors (P.A.D.I.) Open Water Scuba Instructor/Instructor Development Course Staff Instructor, RYA Level 3 Powerboat Handler.

**Interests**

Hill walking and mountaineering, cycling, photography, scuba diving & underwater videography, long distance running.