

Curriculum Vitae - Richard J. Cheel

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Education

PhD (Geology), McMaster University, 1984.
MSc (Geology), University of Ottawa, 1980
Hons. BA (Geography), McMaster University, 1977

Employment History

Academic positions

July 1, 1994 to present, Professor, Department of Earth Sciences, Brock University

July 1 1995 to June 30, 1998, Professor (part-time) McMaster University, School of Geography and Geology.

July 1, 1990 to June 30, 1994, Associate Professor (Tenured), Department of Earth Sciences, Brock University.

July 1, 1986 to June 30, 1990, Assistant Professor, Department of Geological Sciences, Brock University.

August 1, 1984 to July 31, 1986, Assistant Professor, Department of Geology, Brandon University.

January 3 1984 to July 31, 1984, Lecturer, Department of Geology, Brandon University.

Administrative positions

April 1, 2013 to June 30, 2013, Associate Dean (Graduate Studies and Research), Faculty of Mathematics and Science, Brock University.

February 9, 2010 to Dec. 31, 2011, Interim Dean, Faculty of Mathematics and Science, Brock University.

September 1, 2007 to February 9, 2010, Associate Dean, Faculty of Mathematics and Science, Brock University.

June 2001 to June 2003, Vice Chair, Senate, Brock University.

July 1, 1996 to June 30, 1997, Acting Dean, Faculty of Mathematics and Science, Brock University.

October 23 1995 to June 30, 1997, Director, Environmental Science Program, Brock University.

June 1995 to June 1996, Vice-Chair, Senate, Brock University.

January 1, 1995 to June 30, 1996, Chair, Department of Earth Sciences, Brock University.

July 1, 1994 to December 31, 1994, Acting Dean, Faculty of Mathematics and Science, Brock University.

July 1, 1991 to June 30, 1994, Chair, Department of Earth Sciences, Brock University.

Scholarly contributions

Publications

Refereed Articles (Journals and books)

Cheel, R.J., 2003, Hummocky Cross-Stratification. Invited contribution to *The Encyclopedia of Sediment and Sedimentary Rocks*, G.V. Middleton, Editor. Kluwer Academic Publishers, 362-364.

Cheel, R.J., 2003, Heavy Mineral Shadows. Invited contribution to *The Encyclopedia of Sediment and Sedimentary Rocks*, G.V. Middleton, Editor. Kluwer Academic Publishers, p. 355-356.

Cheel, R.J., 2003, Parting lineation and current crescents. In *The Encyclopedia of Sediment and Sedimentary Rocks*, G.V. Middleton, Editor. Kluwer Academic Publishers, 512-514.

Alexander J., J.S. Bridge, R.J. Cheel, and S.F. LeClair, 2001, Bedforms and associated sedimentary structures formed under supercritical water flows over aggrading sand beds. *Sedimentology*, 48: 133-152..

McFarland S., Westrop S.R. and R.J. Cheel. 1999. Allogenic versus autogenic processes in the genesis of Middle Ordovician Brachiopod-rich shell beds, Verulam Formation, Ontario. *Palaios*, 14: 282-287.

Paterson, J. and Cheel, R.J., 1997, The depositional history of the Bloomington complex, an ice-contact deposit in the Oak Ridges Moraine, southern Ontario, Canada: *Quaternary Science Reviews*, 16: p. 705-719.

- Leckie, D.A., and Cheel, R.J., 1997, Sedimentology and depositional history of the Lower Cretaceous Coarse-grained clastics, southwest Alberta and southeast British Columbia: *Canadian Society of Petroleum Geologists, Bulletin*, v. 45, p. 1-24.
- Cheel, R.J. and Middleton, G.V., 1993, Directional scours on a transgressive surface: examples from the Silurian Whirlpool Formation of Southern Ontario, Canada: *Journal of Sedimentary Petrology*, v. 63, p. 392-397.
- Cheel, R.J., and D.A. Leckie, 1993, Hummocky cross-stratification: *Sedimentology Reviews*, v. 1. p. 103-121.
- Cheel, R.J., and D.A. Leckie, 1992, Coarse-grained storm beds of the Upper Cretaceous Chungo Member (Wapiabi Formation), southern Alberta, Canada: *Journal of Sedimentary Petrology*, v. 62, p. 933-945.
- Cheel, R.J., 1991, Grain fabric in hummocky cross-stratified storm beds: genetic implications: *Journal of Sedimentary Petrology*, v. 61, p. 102-110.
- Duke, W.A., Arnott, W., and Cheel, R.J., 1991, Shelf sandstones and hummocky cross-stratification: New insights on a stormy debate: *Geology*, v. 19, p. 625-628.
- Cheel, R.J., 1990, Horizontal lamination and the sequence of bed phases and stratification under upper flow regime conditions: *Sedimentology*, v. 37, p. 517-530.
- Cheel, R.J., 1990, Flow, sediment transport and bedform dynamics over the transition from dunes to upper-stage plane beds: implications for the formation of planar laminae: Discussion of paper by J.R. Bridge and J. Best. *Sedimentology*, v. 37, p. 549-551.
- Cheel, R.J. and Leckie, D.A., 1990, A tidal-inlet complex in the Cretaceous epeiric sea of North America: Virgelle Member, Milk River Formation, southern Alberta, Canada. *Sedimentology*, v. 37, p. 67-81.
- Leckie, D.A. and R.J. Cheel, 1990, Nodular silcretes of the Cypress Hills Formation (U. Eocene to M. Miocene) of southern Saskatchewan, Canada: *Sedimentology*, v. 37, p. 445-454.
- Leckie, D.A. and R.J. Cheel, 1989, Sedimentology of the Cypress Hills Formation (U. Eocene to Miocene): a semi-arid braidplain deposit: *Canadian Journal of Earth Sciences*, v. 26, p. 1918-1931.
- Cheel, R.J. and G.V. Middleton, 1987, Horizontal lamination formed under upper flow regime plane bed conditions: Reply to discussion by J.R. Bridge: *Journal of Geology*, v.95, p. 282.
- Cheel, R.J. and G.V. Middleton, 1986, Horizontal lamination formed under upper flow regime plane bed conditions: *Journal of Geology*, v. 94, p. 489-504.

Cheel, R.J. and G.V. Middleton, 1986, Measurement of small-scale textural laminae in sand-sized sediments: *Journal of Sedimentary Petrology*, v. 56, p. 547-548.

Cheel, R.J. and B.R. Rust, 1986, A sequence of soft-sediment deformation (dewatering) structures in Late Quaternary subaqueous outwash near Ottawa, Canada: *Sedimentary Geology*, v. 47, p. 77-93.

Cheel, R.J., 1984, Heavy mineral shadows, a new sedimentary structure formed under upper flow regime conditions: its directional and hydraulic significance: *Journal of Sedimentary Petrology*, v. 54, p. 1173-1180.

Cheel, R.J., 1982, The depositional history of an esker near Ottawa, Canada: *Canadian Journal of Earth Sciences*, v. 19, p. 1417-1427.

Cheel, R.J. and B.R. Rust, 1982, Coarse-grained facies of glaciomarine deposits near Ottawa, Canada: In R. Davidson-Arnott, W. Nickling and B.D. Fahey, editors, *Research in Glacial, Glaciofluvial and Glaciolacustrine Systems*, Proceedings of the 6th Guelph Symposium on Geomorphology, 1980, p. 279-292.

Refereed Articles (Guidebooks, etc.)

Cheel, R.J. (Editor), 1991, *Sedimentology and Depositional Environments of Ordovician and Silurian Strata of the Niagara Escarpment, Ontario and New York*. Geological Association of Canada, Annual Meeting, Toronto, 1991. Guidebook to Field Trip B4, 99 pp.

Brett, C.E., R.J. Cheel, W.L. Duke, W.M. Goodman, S.T. LoDuca G.V. Middleton, B.R. Pratt, M.A. Rutka and C.J. Salas, 1991, Field Stop Descriptions. In: *Sedimentology and Depositional Environments of Ordovician and Silurian Strata of the Niagara Escarpment, Ontario and New York*. Edited by R.J. Cheel. Geological Association of Canada, Annual Meeting, Toronto, 1991. Guidebook to Field Trip B4, p. 64-99.

Rutka, M.A., Cheel, R.J., Middleton G.V., and Salas, C.J., 1991, The Silurian Whirlpool Sandstone. In: *Sedimentology and Depositional Environments of Ordovician and Silurian Strata of the Niagara Escarpment, Ontario and New York*. Edited by R.J. Cheel. Geological Association of Canada, Annual Meeting, Toronto, 1991. Guidebook to Field Trip B4, p. 27-34.

Leckie, D.A. and R.J. Cheel, 1986, Tidal channel facies of the Virgelle Member (Cretaceous Milk River Formation), southern Alberta, Canada: Current Research, Part B, Geological Survey of Canada, Paper 86-1B, p. 637-645.

Non-refereed Publications

Benincasa, A.J. and R.J. Cheel, 1998, Sedimentology and stratigraphy of the Lower Silurian Grimsby Formation, in subsurface, Lake Erie and southwestern Ontario. *Ontario Petroleum Institute Journal*, v. 36.

McFarland, S., Cheel, R.J., and Westrop, S.R., 1998, Sedimentology of storm-generated shell beds from the Verulam Formation (Middle Ordovician) at Lakefield and Gamesbridge quarries, southern Ontario, Canada. *Ontario Petroleum Institute Journal*, v. 36.

Cheel, R.J., Rutka, M.A., and Middleton, G.V., 1995, The sedimentology of the Lower Silurian Whirlpool Sandstone: in outcrop and subsurface, southern, Ontario. *Ontario Petroleum Institute Journal*, v. 33, 19 p..

Leckie, D.A., Cheel, R.J. and Rosenthal, L., 1989, Sedimentology of the upper Virgelle Member (Upper Cretaceous Milk River Formation), Writing-on-Stone Provincial Park, Alberta, and the southern Alberta transect: Canadian Society of Petroleum Geologists, Second International Research Symposium on Clastic Tidal Deposits, Calgary, Alberta, 49 p.

Published Refereed Conference Proceedings (Abstracts)

Birnie, C., Fueten, F, Stetsky, R., Cheel, R. and Rossi, A., 2012, Lithified aeolian bedforms as evidence for ancient water circulation in West Candor Chasma, Mars. 43rd Lunar and Planetary Science Conference (2012), Abstract 1292.

Cheel, R.J. and Udri, A., 1996 The behavior, internal stratification and fabric of in-phase waves. Geological Society of America, Northeastern Section Annual Meeting, Buffalo, New York, Abstracts with program.

Cheel, R.J. and Leckie, D.A., 1991, Conglomeratic storm beds: their characteristics and paleoprocess interpretation: Geological Association of Canada, Abstracts with program, v. 16, p. A22.

Cheel, R.J. and D.A. Leckie, 1989, Cypress Hills Formation (Oligocene) of southern Alberta and Saskatchewan, Canada: Geological Association of Canada, Abstracts with program, v. 14, p. 113.

Cheel, R.J. and D.A. Leckie, 1988, Cypress Hills Formation (Oligocene) of southern Alberta and Saskatchewan, Canada: deposits of a semi-arid alluvial fan: Society of Economic Paleontologists and Mineralogists Fifth Midyear Meeting, Abstracts with program, p. 10.

Cheel, R.J. and D.A. Leckie, 1987, Evidence for tides in the western interior basin: a case study from the Milk River Formation (U. Cretaceous) of southern Alberta: Geological Association of Canada, Abstracts with program, v. 12, p. 31.

Cheel, R.J., 1984, Horizontal laminae formed by deposition under upper flow regime plane bed conditions: Geological Association of Canada, Abstracts with program, v. 9, p. 52.

Cheel, R.J., 1982, Heavy mineral accumulations under upper flow regime conditions: directional and hydraulic significance: International Association of Sedimentologists Eleventh International Congress, Abstracts, p. 158.

Cheel, R.J. and B.R. Rust, 1980, A sequence of soft-sediment deformation structures in Late Quaternary subaqueous outwash near Ottawa, Ontario: Geological Association of Canada, Abstracts with program, v. 5, p. 45.

Leckie, D.A., and R.J. Cheel, 1990, A tidal inlet complex in the Cretaceous Epeiric sea of North America: Virgelle Member, Milk River Formation, southern Alberta: *in* Tidal inlet and related sand bodies, Modern and Ancient, SEPM Research Conference, San Juan Basin, New Mexico, Technical Program., p. 28-29.

Leckie, D.A., and Cheel, R.J., 1990, A new interpretation for the Oligocene Cypress Hills Formation, southern Alberta and Saskatchewan: Canadian Society of Petroleum Geologists Annual Meeting, "Best of the CSPG Sedimentary Subdivision Session", May, 1990.

Leckie, D.A. and R.J. Cheel, 1986, Tidal channel facies of the Virgelle Member (Cretaceous Milk River Formation), southern Alberta, Canada: International Association of Sedimentologists Twelfth International Congress, Abstracts, p. 177.

Meiher Drees, N.C., Leckie, D.A., and R.J. Cheel, 1987, Sedimentology of tidally influenced shoreline sandstones and offshore, sandy shales; Upper Cretaceous Milk River and Lea Park formations, southern Alberta, Canada: Symposium on Coastal Lowlands: Geology and Geotechnology, The Hague, Netherlands, p. 151.

Meiher Drees, N.C., Leckie, D.A., and R.J. Cheel, 1989, Sedimentology of the Upper Cretaceous Milk River and Lea Park Formations in southern Alberta: Forum '89, Geological Survey of Canada, Oil and Gas Activities in Canada, Program and Abstracts, p. 58

Meiher Drees, N.C., Leckie, D.A., and R.J. Cheel, 1989, Sedimentology of the Upper Cretaceous Milk River and Lea Park Formations in southern Alberta: Second International Research Symposium on Clastic Tidal Deposits, Program and abstracts, p. 61.

Book Review

Cheel, R.J., 1991, Review of "Physical principles of Sedimentology" by K.J. Hsü, *Canadian Society of Petroleum Geologists, Bulletin*, p. 493.

Theses

Cheel, R.J., 1984, Sediment transport and deposition under upper flow regime plane bed conditions: Ph.D. Thesis, McMaster University. Supervised by G.V. Middleton.

Cheel, R.J., 1980, Late Quaternary glaciomarine deposits of the Stittsville area, near Ottawa, Canada: M.Sc. Thesis, University of Ottawa. Supervised by B.R. Rust.

University publications

Cheel, R.J., 1993, *Introduction to Clastic Sedimentology: ERSC 2P31 Course Notes*. Brock University, 141 pp.

Cheel, R.J., 1990, *Grain fabric in hummocky cross-stratified storm beds: genetic implications*: Studies in Sedimentary Processes No. 5, Brock University Department of Geological Sciences Research Report Series No. 29, 11 pp.

Cheel, R.J., 1989, *Horizontal lamination and the sequence of bed phases under upper flow regime conditions*: Studies in Sedimentary Processes No. 4, Brock University Department of Geological Sciences Research Report Series No. 28, 17 pp.

Papers presented at conferences

Cheel, R.J. and Udri, A., 1996, The behavior, internal stratification and fabric of in-phase waves. Geological Society of America, Northeastern Section Annual Meeting, Buffalo, New York, March 22, 1996.

Cheel, R.J., Rutka, M.A., and Middleton, G.V., 1994, The sedimentology of the Lower Silurian Whirlpool Sandstone: in outcrop and subsurface, southern, Ontario. Ontario Petroleum Institute Annual Meeting. Niagara Falls, Ontario, October, 1994.

Cheel, R.J. and Middleton, G.V., 1990, Scours on a transgressive surface of the Silurian Whirlpool Formation in southern Ontario, Canadian Sedimentology Research Group Annual Regional Meeting, St. Catharines, May, 1990.

Cheel, R.J., 1989, Fabric and Grading in hummocky cross-stratified sandstones: genetic implications. Canadian Sedimentology Research Group Regional Meeting, Ottawa, May, 1989.

Cheel, R.J., 1989, Horizontal lamination and the sequence of bedforms and stratification under upper flow regime conditions. Canadian Sedimentology Research Group Regional Meeting, Ottawa, May, 1989.

Cheel, R.J., 1988, The depositional history of the Oligocene Cypress Hills Formation, southern Alberta and Saskatchewan: Canadian Sedimentological Research Group, Second Annual Regional Meeting (Central Canada), Queen's University, Kingston, Ontario, May 15.

Cheel, R.J., 1984, Horizontal laminae formed by deposition under upper flow regime plane bed conditions: Geological Association of Canada, May, 1984.

Cheel, R.J., 1982, Heavy mineral accumulations under upper flow regime conditions: directional and hydraulic significance: International Association of Sedimentologists Eleventh International Congress, August, 1982.

Cheel, R.J. and Leckie, D.A., 1991, Conglomeratic storm beds: their characteristics and paleoprocess interpretation: Geological Association of Canada, Abstracts with program, v. 16, p. A22.

Cheel, R.J. and B.R. Rust, 1980, Coarse-grained facies of glaciomarine deposits near Ottawa, Canada: Research in Glacial, Glaciofluvial and Glaciolacustrine Systems, The 6th Guelph Symposium on Geomorphology, May, 1980.

Cheel, R.J. and B.R. Rust, 1980, A sequence of soft-sediment deformation structures in Late Quaternary subaqueous outwash near Ottawa, Ontario: Geological Association of Canada, Halifax, May, 1980.

Cheel, R.J. and D.A. Leckie, 1989, Cypress Hills Formation (Oligocene) of southern Alberta and Saskatchewan, Canada: Geological Association of Canada, Montreal, May, 1989.

Cheel, R.J. and D.A. Leckie, 1988, Cypress Hills Formation (Oligocene) of southern Alberta and Saskatchewan, Canada: deposits of a semi-arid alluvial fan: Society of Economic Paleontologists and Mineralogists Fifth Midyear Meeting, Columbus, Ohio, 1988.

Cheel, R.J. and D.A. Leckie, 1987, Evidence for tides in the western interior basin: a case study from the Milk River Formation (U. Cretaceous) of southern Alberta: Geological Association of Canada, Saskatoon, 1987.

Leckie, D.A., and R.J. Cheel, 1990, A tidal inlet complex in the Cretaceous Epeiric sea of North America: Virgelle Member, Milk River Formation, southern Alberta: *in* Tidal inlet and related sand bodies, Modern and Ancient, SEPM Research Conference, San Juan Basin, New Mexico.

Leckie, D.A. and R.J. Cheel, 1986, Tidal channel facies of the Virgelle Member (Cretaceous Milk River Formation), southern Alberta, Canada: International Association of Sedimentologists Twelfth International Congress, Australia, August, 1986.

Meiher Drees, N.C., Leckie, D.A., and R.J. Cheel, 1987, Sedimentology of tidally influenced shoreline sandstones and offshore, sandy shales; Upper Cretaceous Milk River and Lea Park formations, southern Alberta, Canada: Symposium on Coastal Lowlands: Geology and Geotechnology, The Hague, Netherlands.

Graduate Students Supervised

Michael Johnson, BSc Brock University, 1995. Thesis: The sedimentology of the Silurian Whirlpool Formation, in subsurface, southern Ontario, Canada. Completed 1998.

Sean McFarland, BSc University of Toronto, 1984. Thesis: The sedimentology and taphonomy of the Ordovician Verulam Formation, southern Ontario, Canada. Completed 1997. Winner of the Ontario Petroleum Institute's "Best MSc Thesis" Award for 1997.

Anthony Benincasa, BSc Waterloo University, 1978. Thesis: The sedimentology of the Grimsby Formation in subsurface, southern Ontario, Canada. Completed 1996. Winner of the Ontario Petroleum Institute's "Best MSc Thesis" Award for 1996.

Jens Paterson. BSc Queen's University, 1993. Thesis: The sedimentology of an element of the Oak Ridges Moraine, southern Ontario, Canada. Completed 1995.

Research Grants Internal Grants Awarded

Year	Institution	Amount
1994	Brock University NSERC General Research Grant	\$4,200
1991	Brock University NSERC General Research Grant	\$2,400

1990	Brock University NSERC General Research Grant	\$5,645
1986	Brock University President's Grant	\$3,000
1986	Brandon University President's Grant	\$1,461
1985	Brandon University President's Grant	\$1,360
1984	Brandon University President's Grant	\$5,922

Refereed External Grants Awarded

Year(s)	Granting Agency	Amount
1995-1999	NSERC Research Grant (\$23,100/yr)	\$92,400
1993-1995	NSERC Research Partnerships Grant for Industrially-Oriented Research	\$14,000
1992-1995	NSERC Research Grant (\$21,000/yr)	\$63,000
1991	Energy Mines and Resources Research Agreement	\$4,000
1990-1992	NSERC Operating Grant (\$12,000/yr)	\$24,000
1990	Energy Mines and Resources Research Agreement	\$4,500
1989	Energy Mines and Resources Research Agreement	\$4,500
1987-1990	NSERC Operating Grant (\$12,000/yr)	\$36,000
1987	Energy Mines and Resources Research Agreement	\$4,000
1985-1987	NSERC Operating Grant (\$9,200/yr)	\$18,400

1985	NSERC Equipment Grant	\$10,159
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Year(s)	Industry funding Source of funding	Amount
1993-95	Telesis Oil and Gas	\$9,000
1993-95	Pembina Exploration Ltd.	\$5,000