

Dr David Geelan

Curriculum Vitae

Contact and Personal Information

Name: David Robert Geelan Date of Birth: 9 April 1964
Citizenship: Australian (permanent resident of Canada) Place of Birth: Sydney, Australia
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Educational Qualifications

Doctor of Philosophy	1998	Curtin University of Technology	My doctoral research was conducted during a year of team-teaching with five middle school teachers in an innovative Perth school. The thesis included a 30,000 word 'novel' as part of its representation and exploration of the research experience, and was published on the Internet.
Master of Education	1994	University of Melbourne	I completed three coursework units in the Masters program, but then converted to a full research degree. The thesis was an autoethnographic study of my development as a beginning science teacher.
Bachelor of Education (Chemistry)	1988	Avondale College	This is a four year undergraduate education degree with a strong science and education base. I completed a chemistry major, physics minor and mathematics as a third teaching field.

Employment History

2006-present	Senior Lecturer, Science Education, University of Queensland, Australia
2001-2006	Assistant/Associate Professor of Science Education, University of Alberta
2000-2001	<ul style="list-style-type: none">Postdoctoral research, Edith Cowan University. Studying 'School physics and the construction of educational advantage'.On-campus tutoring in EDU4102 – Research Methods for Beginning Teachers.Ongoing involvement in developing and teaching Curtin University's Internet-based units SMEC 612 - Curricula in Science, Mathematics and Technology Education and CSE 612 - Curricula in Science Education (for Taiwanese students, in conjunction with National Kaohsiung Normal University).

- 1998-1999
 - Teaching Year 9 mathematics, Year 10 mathematics and science, Year 11 calculus and chemistry and Year 12 chemistry at Armadale Christian College.
 - Web development, educational development, teaching and research in the Internet-based distance education programs of the Science and Mathematics Education Centre, Curtin University of Technology – specifically SMEC 612 – Curricula in Science, Mathematics and Technology Education and SMEC 501 – Foundations and Issues in Science, Mathematics and Technology Education.
- 1995-1997
 - Full time doctoral research, including one year of part time (0.4) volunteer middle school teaching at Ballajura Community College.
 - Web development, educational development, teaching and research in the Internet-based distance education programs of the Science and Mathematics Education Centre, Curtin University of Technology.
- 1993-1994 Teacher education of students from Fiji, Samoa, Tonga and Papua New Guinea, in Dip.Ed. and B.Ed. courses, at Pacific Adventist University, Port Moresby, Papua New Guinea. Included participation in major revisions of the diploma and degree programs.
- 1992 Teaching Year 11 and 12 physics, junior school science and mathematics and Year 11 chemistry at Northern Beaches Christian School, Terrey Hills.
- 1991
 - Full time study, M.Ed., University of Melbourne.
 - Relief teaching (0.5), Lilydale Adventist Academy and Nunawading Adventist College, Melbourne.
- 1989-1990 Teaching Year 11 and 12 physics, Year 10 mathematics and Year 9 mathematics and science, Lilydale Adventist Academy.

Publications

Books

Geelan, D.R. (2006). *Undead Theories: Constructivism, Eclecticism and Research in Education*. Rotterdam: Sense Publishers.

Geelan, D.R. (2004). *Weaving Narrative Nets to Capture Classrooms: Multimethod Qualitative Approaches for Research in Education*. Dordrecht: Kluwer Academic Publishers.

Major Reports

Sigurdson, S., & Geelan, D.R. (2005). *Summative Report on "The Alberta Professional Development Model: Short Course for Mathematics and Science Educators from South Africa" (10 pages)*. Calgary, Alberta: Agriteam Canada.

Geelan, D.R. (2004). *Canada-South Africa Teacher Development Program - Summative Report of Physical Science Activities, Mangaung (2004) Project, Free State Project (10 pages)*. Calgary, Alberta: Agriteam Canada.

Geelan, D.R. (2002). *Falling Through The Cracks: A Summary of What We Heard About Teaching and Learning Conditions in Alberta Schools (1st ed., vol. ISBN 1-894552-19-9)*. Edmonton, Alberta: Alberta Teachers' Association.

Rowell, P., Oberg, D., McClay, J., Nocente, N., & Geelan, D. (2002, August). *Scientists 2010: Final Report*. Edmonton, Alberta: Faculty of Education, University of Alberta.

Book Chapters

Geelan, D.R. (in press). Songs of innocence and of experience: impressionist tales and secret stories of life in classrooms. In P. Taylor and J. Wallace, (Eds.), *Contemporary Qualitative Research: Exemplars For Science And Mathematics Educators*. Dordrecht: Springer.

Geelan, D.R. (2005). Using webs of narrative to explore negotiation of meaning and practice. In W-M. Roth (Ed.), *Auto/Biography and Auto/Ethnography: Praxis of Research Method*. Rotterdam: Sense Publishers.

Geelan, D.R., Larochelle, M. & Lemke, J.L. (2002). The laws of science. In J. Wallace & W. Louden (Eds.), *Dilemmas of Science Teaching: Perspectives on Problems of Practice*. (pp. 22-35) London and New York: RoutledgeFalmer.

Papers in Refereed Journals

Geelan, D.R. (2006). Assessing what matters. *Delta-K: Journal of the Mathematics Council of the Alberta Teachers Association*, 43 (2), 6.

Geelan, D.R., Wildy, H., Louden, W., & Wallace, J. (2003). Teaching for understanding and/or teaching for the exam in high school physics. *International Journal of Science Education*, 26(4), 447-462.

Geelan, D.R. (2003a). 'Actually, it's not quite like that': how should we develop a plan for teaching chemistry? *Alberta Science Education Journal*, 36(1), 38-44.

Geelan, D.R. (2003b). Teacher expertise and explanatory frameworks in a successful physics classroom. *Australian Science Teachers Journal*, 49(3), 22-32.

Geelan, D.R., & Hopkins, S.L. (2002). Multimethod Approaches for Research in Science and Mathematics Education. In W. Brouwer (Ed.), *Alberta Science Education Journal*, 34(2), 3-14. Edmonton, Alberta: Alberta Teachers' Association.

Geelan, D.R. (2001a). The empty centre: Power/knowledge, relationships and the myth of 'student centred teaching' in teacher education. *Australian Journal of Teacher Education*, 26(2): 27-37.

Geelan, D.R. (2001b). Feyerabend revisited: Epistemological anarchy and disciplined eclecticism in educational research. *Australian Educational Researcher*, 28(1): 129-146.

Geelan, D.R. & Taylor, P.C. (2001a). Writing our lived experience: Beyond the (pale) hermeneutic? *Electronic Journal of Science Education*, 5(4): 6,007 words.

Geelan, D.R. & Taylor, P.C. (2001b). Embodying our values in our teaching practices: building open and critical discourse through computer mediated communication. *Journal of Interactive Learning Research*, 12(4): 375-401.

Bodner, G.M., Klobuchar, M. & Geelan, D.R. (2001). The many forms of constructivism. *Journal of Chemical Education*, 78(8), 1107.

Geelan, D.R. (2000). Sketching some postmodern alternatives: Beyond paradigms and research programs as referents for science education. *Electronic Journal of Science Education*, 5(1): 10,164 words.

Taylor, P.C., Geelan, D.R., Dawson, V.M. & Stapleton, A. (1999). Can teaching in a virtual classroom enhance real learning? *FID Review* 1(2-3): 121-127.

Geelan, D.R. (1997a). Epistemological anarchy and the many forms of constructivism. *Science & Education*, 6(1-2): 15-28.

Geelan, D.R. (1997b). Weaving narrative nets to capture school science classrooms. *Research in Science Education*, 27(4): 553-563.

- Geelan, D.R. (1997c). Prior knowledge, prior conceptions, prior constructs: What do constructivists really mean, and are they practicing what they preach? *Australian Science Teachers Journal*, 43(3): 26-28.
- Geelan, D.R. (1996a). Learning to communicate: developing as a science teacher. *Australian Science Teachers Journal*, 42(1): 30-34.
- Geelan, D.R. (1996b). The empty centre: Does student-centred learning imply abdication or role redefinition for educators? *Research and Development in Higher Education*, 19: 263-265.
- Geelan, D.R., Taylor, P.C. & Day, B. (1996). Teaching as a moral activity: Critical reflections in teacher education. *Research and Development in Higher Education*, 19: 258-262.
- Geelan, D.R. (1995). Matrix technique: A constructivist approach to curriculum development in science. *Australian Science Teachers Journal*, 41(3): 32-36.

Papers in Refereed Conference Proceedings

- Geelan, D., Fiege, K., & Peacock, K. (2004). Learning Together, Virtually Present: Teacher Professional Development in the RACOL Project. *World Conference on Educational Multimedia, Hypermedia and Telecommunications 2004(1)*, 3316-3320. [Online]. Available: <http://dl.aace.org/15912>
- Fiege, K., Peacock, K., & Geelan, D. (2004). Professional Development: A Rural School District's Experience with Videoconferencing. *Society for Information Technology and Teacher Education International Conference 2004(1)*, 2150-2157. [Online]. Available: <http://dl.aace.org/14659>
- Geelan, D.R. (2003, October). The death of theory in educational research. In B. Davis (Ed.), *Proceedings: Proceedings Of The First Conference On Complexity Science And Educational Research* (pp. 169-185). Edmonton, AB: University of Alberta.
- Geelan, D.R. (2003a). Canadian stories of distant cases: Audiographics teaching and learning of high school physics in the RACOL project. In C. McNaught & D. Lassner (Eds.), *Proceedings: World Conference of Multimedia, Hypermedia and Telecommunications (ED-MEDIA 2003)*, Honolulu, HI (pp. 2924-2926). Norfolk, VA: Association for the Advancement of Computing in Education.
- Geelan, D.R. (2003b). Video analysis of physics teachers' explanatory frameworks. In C. McNaught & D. Lassner (Eds.), *Proceedings: World Conference of Multimedia, Hypermedia and Telecommunications (ED-MEDIA 2003)*, Honolulu, HI (pp. 2096-2100). Norfolk, VA: Association for the Advancement of Computing in Education.
- Geelan, D., Taylor, P.C. & Dougiamas, M. (2000, November). Developing distance education students' skills in critically self-reflective practice using computer mediated communication. *Proceedings of the 1st Working for E-business Conference*, Edith Cowan University, Western Australia.
- Geelan, D.R., Taylor, P.C.S., Fox, B., Herrmann, A., Stapleton, A. & Dawson, V.M. (1999, Feb) Arcs, braids and webs: Exploring constructed narratives in a web-based distance education unit. *Proceedings of the 1999 Teaching and Learning Forum*, University of Western Australia, Perth, Western Australia.
- Taylor, P.C.S., Dawson, V.M., Geelan, D.R., Stapleton, A., Fox, B., Herrmann, A. & Parker, L. (1999, Feb) Virtual teaching or virtually teaching: Does Internet-based teaching require multiple metaphors of mind? *Proceedings of the 1999 Teaching and Learning Forum*, University of Western Australia, Perth, Western Australia.
- Geelan, D.R., Taylor, P.C. and Day, B. (1998, Feb). Representing critical reflections in teacher education. *Proceedings of the 1998 Teaching and Learning Forum*, University of Western Australia, Perth, Western Australia.
- Taylor, P.C. & Geelan, D.R. (1997, Dec). Words for the boys: Gender and connected knowing in web-based distance education. *Proceedings of the Australasian Joint Regional Conference of Gender*

- and Science and Technology (GASAT) and the International Organisation for Science and Technology Education (IOSTE), Curtin University of Technology, Perth, Western Australia.
- Taylor, P.C., Geelan, D.R., Fox, R. & Hermann, A. (1997, Dec). Perspectives and possibilities: Electronic interactivity and social constructivist teaching in a science, mathematics and technology teacher education program. Proceedings of the Australian Society for Computers in Learning in Tertiary Education (ASCILITE) Conference, Curtin University of Technology, Perth, Western Australia.
- Geelan, D.R. (1996a, November). Anyone can teach science: an old argument revisited. Proceedings of the Western Australian Science Education Association (WASEA) conference, Perth, Western Australia.
- Geelan, D.R. (1996b, November). Prior knowledge, prior conceptions, prior constructs: what do constructivists really mean, and are they practicing what they preach? Proceedings of the Western Australian Science Education Association (WASEA) conference, Perth, Western Australia.

Conference Presentations

- Geelan, D.R. (2002, April). Teacher expertise and explanatory frameworks in a successful physics classroom. Paper presented at the annual conference of the National Association for Research in Science Teaching (NARST), New Orleans, LA.
- Taylor, P.C., Geelan, D., & Dougiamas, M. (2002, April) Developing understandings: Web-Based learning and critical (self) reflection in teacher education. Paper presented at the annual conference of the National Association for Research in Science Teaching (NARST), New Orleans, LA.
- Geelan, D.R. (2002, May). Teacher expertise and explanatory frameworks in a successful physics classroom. Paper presented at the annual conference of the Canadian Society for Studies in Education (CSSE), Toronto, ON.
- Taylor, P.C., Dougiamas, M., & Geelan, D. (2002, April) Creating an online community of critical reflective inquiry: Professional development at a distance. Paper presented at the annual meeting of the American Educational Research Association (AERA), New Orleans, LA.
- Geelan, D.R., Wildy, H. & Loudon, W. (2001, April). Achievement and advantage in high school physics. Paper presented at the annual meeting of the American Educational Research Association (AERA), Seattle, WA.
- Geelan, D.R. & Hopkins, S. (2000, June). Multimethod approaches for research in science and mathematics education. Paper presented at the annual conference of the Australian Science Education Research Association (ASERA), Fremantle, Western Australia.
- Geelan, D.R., Wildy, H., Loudon, W. & Wallace, J. (2000, June). "They shall have abundance...": Achievement and advantage in Year 12 physics. Paper presented at the annual conference of the Australian Science Education Research Association (ASERA), Fremantle, Western Australia.
- Geelan, D.R. & Taylor, P.C. (1998, July). Writing our lived experience: beyond the (pale) hermeneutic? Paper presented at the annual conference of the Australian Science Education Research Association (ASERA), Darwin, Northern Territory.
- Geelan, D.R. (1997, March) Weaving Narrative Nets To Capture School Science Classrooms. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching (NARST), Oak Brook, IL.

Research Grant Funding

(NB: Unless otherwise identified all grant funds are in Canadian dollars)

Granting Agency: Alberta Education
Title of Project: Impact of SuperNet on the K-12 Education System in Alberta
Total Amount Received: \$70,000 Period Covered by Grant: 2006, 2007
Principal Investigator: Stanley Varnhagen, Learning Solutions
Co-Principal Investigators: Myra Sears, Learning Solutions, Brad Arkison, Learning Solutions
Other Investigators: David Geelan, University of Alberta
Role: Adviser/Consultant

Granting Agency: CRYSTAL Alberta
Title of Project: Global Climate Change: Development of Visualization Prototypes in Science 10, Unit D □
Energy Flow in Global Systems
Total Amount Received: \$23,190 Period Covered by Grant: 2005, 2006
Principal Investigator: David Geelan, University of Alberta
Co-Principal Investigators: Brian Martin and Peter Mahaffy, King's University College; Mike Stieff, University of California (Davis); Rob Simmon, NASA Goddard Space Flight Centre

Granting Agency: CRYSTAL Alberta
Title of Project: Seeing a World in a Grain of Sand: Visualizing the Unseen
Total Amount Received: \$27,010 Period Covered by Grant: 2005, 2006
Principal Investigator: Brian Martin (King's University College)
Co-Principal Investigators: Brenda Gustafson and Linda Phillips, Department Elementary Education, University of Alberta; David Geelan, Department Secondary Education, University of Alberta; David Visser, Harry Ainlay High School; Wytze Brouwer, Professor Emeritus - Physics and Secondary Education, University of Alberta

Granting Agency: National Science Foundation (USA)
Title of Project: Addressing Misconceptions in the Understanding of Global Climate Change Through Visualization
Total Amount Received: US\$5,000 Period Covered by Grant: 2005, 2006
Principal Investigator: Mike Stieff (University of California, Davis)
Co-Principal Investigators: David Geelan (University of Alberta), Brian Martin (King's University College), Peter Mahaffy (King's University College), Robert Simmon (NASA Goddard Space Flight Centre)

Granting Agency: Learning Enhancement Envelope, Alberta Learning
Title of Project: Rural Advanced Community of Learners Project Evaluation
Total Amount Received: \$20,000 Period Covered by Grant: 2003
Principal Investigator: T. Craig Montgomerie
Co-Principal Investigators: David Geelan

Granting Agency: Learning Enhancement Envelope, Alberta Learning
Title of Project: Best Practices in Synchronous/Asynchronous Distance Learning Environments
Total Amount Received: \$35,000 Period Covered by Grant: 2003
Principal Investigator: T. Craig Montgomerie
Co-Principal Investigators: David Geelan

Granting Agency: Support for the Advancement of Scholarship Fund (U of A)
Title of Project: Explanatory frameworks and teacher expertise in secondary school physics education
Total Amount Received: \$5,000 Period Covered by Grant: 2003

Principal Investigator: David Geelan

Granting Agency: Alberta Learning

Title of Project: Scientists 2010 Project Investigation

Total Amount Received: \$30,000 Period Covered by Grant: 2001, 2002

Principal Investigator: Pat Rowell

Other Investigators: Dianne Oberg, Norma Nocente, Jill McClay, David Geelan

Granting Agency: Endowment Fund for the Future, Capital Fund

Title of Project: Explanatory Frameworks And Teacher Expertise In Secondary School Physics Education

Total Amount Received: \$8,594 Period Covered by Grant: 2002

Principal Investigator: David Geelan

Granting Agency: Imperial Oil National Centre for Mathematics, Science and Technology Education

Title of Project: Explanatory Frameworks And Teacher Expertise In Secondary School Physics Education

Total Amount Received: \$24,673 Period Covered by Grant: 2002, 2003

Principal Investigator: David Geelan

Granting Agency: Imperial Oil National Centre for Mathematics, Science and Technology Education

Title of Project: Physics Applets Project Implementation

Total Amount Received: \$22,000 Period Covered by Grant: 2002, 2003

Principal Investigator: Wytze Brouwer

Other Investigators: Brian Martin, David Geelan

Granting Agency: Curtin University of Technology

Title of Project: School Stories: Weaving narrative nets to capture science classrooms:

Total Amount Received: AU\$45,000 Period Covered by Grant: 1995-1997

Principal Investigator: David Geelan

Consultancies

Canada-South Africa Teacher Development Project (CSATDP) – 2003-2004

Canadian International Development Agency (CIDA) funded project, administered through Alberta Learning (Alberta Ministry of Education) and Agriteam Canada, for capacity building in teacher professional development in South Africa. I am involved in the section of the project in Free State province, working with colleagues at the University of the Free State, the Free State provincial Education Department and the Motheo District (Bloemfontein and area) Education Department. The project involves planning, delivering and evaluating three one-week workshops to teachers in disadvantaged schools in the former townships of Botshabelo (2003) and Mangaug (2004), and includes approximately 70 days of work each calendar year, including three 2-week trips to South Africa.

Rural Advanced Community of Learners (RACOL) Project – 2003-2004

The RACOL project is focused on delivering high school courses to students in rural areas of Alberta (initially the Fort Vermilion School Division in northern Alberta) to which they would not otherwise have had access. The project uses high speed, broadband networks (the Alberta Supernet), videoconferencing and a suite of other synchronous and asynchronous technologies to allow a single teacher to be 'virtually

present' in up to four classrooms across the school division. During 2003 I taught a Physics 20 (Grade 11 Physics) course to 16 students in four schools in Fort Vermilion School Division, from Edmonton, over 800 km away. During 2003 and 2004 I was contracted to oversee the teacher professional development facet of the RACOL project, and worked through both face-to-face and videoconferenced meetings and workshops to equip teachers to teach in the virtual presence environment.

University of Fort Hare Teacher Development Project – 2002

Canadian International Development Agency (CIDA) funded project offering teacher professional development workshops for teachers in the former township of Mdantsane, outside East London in the Eastern Cape Province of South Africa. Involved planning and delivering, in consultation with colleagues at the University of Fort Hare, two 3-day workshops in schools in East London and Mdantsane on a single visit in March 2002.

Alberta Teachers' Association (ATA) Consultation Report on Learning Conditions – 2002

In the context of an industrial dispute related to provincial funding of education in Alberta, the Alberta Teachers' Association conducted hearings in a number of rural and urban centres throughout the province, and collected almost 1200 written submissions on conditions in schools. I was commissioned to read these submissions and, within one month (July 2002), produce a written report that would be submitted to the Commission on Learning that was set up by the Alberta government. I produced the report 'Falling Through The Cracks: A Summary of What We Heard About Teaching and Learning Conditions in Alberta Schools', which was published by the ATA and presented to the Commission.

Service on Committees

Undergraduate Program Review Committee, Faculty of Education

Facilities Development Committee, University of Alberta

Research Ethics Board, Faculties of Education and Extension

Faculty Executive Council, Faculty of Education

Council for Technology in Education, Faculty of Education

Faculty of Education representative on Faculty of Science Council

Graduate Studies Committee, Department of Secondary Education

Board Member, Imperial Oil National Centre for Mathematics, Science and Technology Education

Supervision of Graduate Students

Supervised or co-supervised 7 doctoral students and 8 MEd students. Three MEd students have completed their programs, one PhD student completed her program. Served on supervisory or examining committees for 10 additional doctoral students and 7 additional MEd students.

Editorial Responsibilities

Served on the editorial boards and/or reviewed papers for the following journals

Journal of Technology and Teacher Education (13 papers reviewed)

Journal of Computers in Mathematics and Science Teaching (18 papers reviewed)

Canadian Journal of Education (2 papers reviewed)

Alberta Journal of Educational Research (3 papers reviewed)

Research in Science and Technology Education (1 paper reviewed)

Science Education (1 paper reviewed)

International Journal for the Scholarship of Teaching and Learning - member, editorial board

Reviewed two book manuscripts for Springer Academic Publishers.

Awards

2005 Carnegie Scholarship – the Carnegie Foundation for the Advancement of Teaching