

## PROFESSOR VINCE GEIGER

### Contact information

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### Work history

<i>Position</i>	<i>Organisation</i>	<i>Years</i>
Professor of Mathematics Education	Institute for Learning Sciences and Teacher Education, Australian Catholic University (ACU)	2018-present
Professor of Mathematics Education and Research Fellow	Institute for Learning Sciences and Teacher Education, Australian Catholic University (ACU)	2017-2019
Associate Professor and Research Fellow	Learning Sciences Institute Australia (ACU)	2015-2016
Deputy Head of School (Research)	School of Education, ACU (Brisbane Campus)	2012-2014
Senior Lecturer	School of Education, ACU (Brisbane Campus)	2010 - 2012
Senior Lecturer: Secondary Programs Coordinator and Professional Experience Coordinator	School of Education, ACU (Brisbane Campus)	2007 - 2010
Lecturer	School of Education, ACU (Brisbane Campus)	2005 - 2009
Mathematics Coordinator	Hillbrook Anglican School, Brisbane	1991 - 2005
Teacher of Mathematics	St Peter Claver College, Ipswich	1988 - 1990
Secondary Teacher of Mathematics and Science	St Joseph's CBC, Gregory Terrace, Brisbane	1983 - 1986

### Education, fields of expertise and research supervision

#### Education

<i>Qualifications</i>	<i>Organisation</i>	<i>Completed</i>
Doctor of Philosophy	The University of Queensland	2009
Master of Educational Studies	The University of Queensland	1993
Bachelor of Educational Studies	The University of Queensland	1985
Diploma of Education	The University of Queensland	1982
Bachelor of Science	Griffith University	1979

#### Fields of educational expertise

- Mathematics education
- Enabling effective numeracy practice across the curriculum
- The role of technology in mathematics education
- Teaching and learning mathematical modelling
- Effective practices in STEM teaching and learning
- Leadership in STEM
- Teacher professional learning

## Expertise in qualitative, quantitative and mixed research design methodologies

- Design-based research
- Thematic analysis
- Grounded theory approaches to analysis
- Mixed methods approaches

## Research supervision fields

- Critical mathematical thinking
- The role of technology in mathematics education
- Indigenous students mathematics learning
- Church planting

## Funded research

### Competitive grants

<i>Years</i>	<i>Grants</i>	<i>Funding</i>
2018-2020	Department of Education and Training (Federal): Beswick, K., Fraser, S., & Geiger, V.; Principals as STEM Leaders	AUD 2,600,000
2017-2019	ARC Discovery: Geiger, V., Stillman, G., Brown, J., Galbraith, P., & Niss, M.; Using mathematics to solve real world problems: The role of enablers	AUD 446,000
2017-2018	Australian Universities-German DAAD Joint Research Cooperation Scheme: Geiger, V., Miller, J., Wells, J., Bruder, R., & Roder, U.; Designing challenging online mathematical tasks (DCOMT): Strengthening mathematical knowledge in pre-service teacher education	AUD 50,000
2015-2017	ARC DECRA: Geiger, V.; Designing and implementing cross-curricular numeracy tasks for effective teaching and learning	AUD 361,876
2015-2016	Office of the Chief Scientist: Callingham, R., Beswick, K., Goos, M., Geiger, V. et al.; Building an evidence base for national best practice in mathematics education	AUD 542,260
2013-2016	DIICSRTE-OLT: Mulligan, J., Geiger, V. et al.; Opening real science: Authentic mathematics and science learning for Australia	AUD 2,300,000
2012-2014	ARC Discovery: Geiger, V., Goos, M., Dole, S., Forgasz, H.; Enhancing numeracy learning and teaching across the curriculum	AUD 210,000

### Research consultancies

<i>Years</i>	<i>Research</i>	<i>Funding</i>
2017-2023	Organisation for Economic Co-operation and Development (OECD): Tout, D., Geiger, V., Maguire, T., Hoogland, K., Demonty, I., & Diaz-Palomar, J.: PIAAC 2 <sup>nd</sup> cycle numeracy expert group.	AUD 19,000
2016	Organisation for Economic Co-operation and Development (OECD): Tout, D., Geiger, V., Maguire, T., Hoogland, K., Coben, D., & Ginsburg, L.; Review of the Programme of International Assessment of Adult Competencies (PIAAC) numeracy assessment framework.	AUD 21,000
2014-2015	Queensland College of Teachers: Goos, M., Bennison, A., & Geiger, V.; Numeracy teaching across the curriculum in Queensland: Resources for teachers.	AUD 40,000
2014-2015	Brisbane Catholic Education: Geiger, V., Gleeson, J., & Effenev., G.; Education for sustainability in BCE schools: An investigation of policy and practice.	AUD 9,000
2012	Brisbane Catholic Education: Goos, M., Dole, S., & Geiger, V.; Sustaining numeracy curriculum leadership: A whole school approach.	AUD 89,000
2012	ACU/Brisbane Catholic Education – Industry Research Incentive Scheme: Lamb, J., Geiger, V., & Branson, C.; Models of leading	QUD 10,000

	curriculum reform in numeracy.	
2010-2011	Brisbane Catholic Education: Goos, M., Dole, S., & Geiger, V.; Leading numeracy learning.	AUD 108,000
2010-2012	Australian Association of Mathematics Teachers: Geiger, V., & Goos, M.; Make it count: Numeracy, mathematics and Indigenous learners	AUD 34,000
2009	Department of Education and Children's Services (South Australia): Goos, M., Dole, S., & Geiger, V.; Numeracy in the learning areas (middle years).	AUD 60,000
2006-2007	Texas Instruments: Geiger, V., & Goos, M.; Modelling the future with mathematics and technology.	AUD 13,000

### Other funded research

Year	Research	Funding
2010-2012	Australian Catholic University: Geiger V., Mulholland, J., Lamb, J., Kennedy, J., Thomas, L., & Howell, J.; McAuley research support team.	AUD 30,000
2011	Australian Catholic University: Stillman, G., Clarkson, P., Geiger, V., Faragher, R., Brown, J.; Research interest group: Mathematical modeling.	AUD 5,000
2009	Australia Catholic University Mathematics and Literacy Flagship: Lamb, J., & Geiger, V.; NAPLAN research initiative: Teaching and learning decimal fractions.	AUD 6,000
2006-2007	Australia Catholic University Mathematics and Literacy Flagship: Geiger, V., Faragher, R., & Goos, M.; Mathematical modelling in CAS Clothing: Exploring the power of computer algebra systems in a mathematical modelling context.	AUD 20,000

## Publications

### Edited Books

- Geiger, V, McKinlay, J, O'Brien, G. (1999). *The Sub-AToMIC project: Subsequent applications to mathematics incorporating calculators*. Brisbane: Queensland Association of Mathematics Teachers
- Geiger, V, McKinlay, J, O'Brien, G. (1997). *The AToMIC project: Applications to mathematics incorporating calculators*. Brisbane: Queensland Association of Mathematics Teachers.

### Books

- Goos, M., Geiger, V., Dole, S., Forgasz, H., & Bennison, A., (2019). *Enhancing numeracy teaching and learning across the curriculum*. Crows Nest, NSW: Allen & Unwin
- Goos, M., Vale, C., Stillman, G., with Makar, K., Herbert, S., & Geiger, V. (2017). *Teaching secondary school mathematics: Research and practice for 21st century* (2nd edition). Crows Nest, NSW: Allen & Unwin
- Geiger, V. (1998). *Turbo charging the TI-80*. Adelaide: Australian Association of Mathematics Teachers.

### Book chapters (selected from 2008)

- Geiger, V. (2017). Designing for mathematical applications and modelling tasks in technology rich environments. In A. Leung & A. Baccaglioni-Frank (Eds.), *Digital technologies in designing mathematics education tasks - Potential and pitfalls*. (285-302). Dordrecht: Springer.
- Frejd, P., & Geiger, V. (2017). Exploring the notion of mathematical literacy in curricula documents. In G. Stillman, G. Kaiser & W. Blum. (Eds.), *Mathematical modelling and applications: Crossing and researching boundaries in mathematics education* (pp. 255-264). Cham: Springer. DOI: [https://doi.org/10.1007/978-3-319-62968-1\\_22](https://doi.org/10.1007/978-3-319-62968-1_22)
- Geiger, V., Arleback, J., & Frejd, P. (2016). Interpreting curricula to find opportunities for modeling: Case studies from Australia and Sweden. In C. Hirsch & A. Roth McDuffie (Eds.), *Annual perspectives in mathematics education 2016: Mathematical modeling and modeling mathematics* (pp. 207-215). NCTM.
- Geiger, V., Calder, N., Tan, H., Loong, E., Miller, J., & Larkin, K. (2016). Transformations of teaching and learning through digital technologies. In K. Makar, S. Dole, J. Visnovska, M., Goos, A. Bennison & K. Fry (Eds.), *Research in mathematics education in Australasia 2012-2015* (pp. 255-280). Singapore: Springer. DOI 10.1007/978-981-10-1419-2
- Leung, A., & Bolite-Fran, J., with Arzarello, F., Bokhove, C., Boon, P., Buchbinder, O., Chan, Y., Clark-Wilson, A., Drijvers, P., Geiger, V., Healy, L., Joubert, M., Mackrell, K., Mamolo, A., Or, A., Robotti, E.,

- Soury-Lavergne, S., Thomas, M., Wozniak, F., Yerushalmy, M., and additional contributions from Doorman, M. Hassan, S., Fernandes, A., Lin, C., Maschietto, M., Redmond, T., Tacoma, S., Timotheus, J., Whiteley, W., Zaslavsky, O. (2016). Designing Mathematics Tasks: The Role of Tools. In A. Watson, M. Ohtani (Eds.), *Task Design In Mathematics Education* (pp. 191-225). Springer: Switzerland. DOI 10.1007/978-3-319-09629-2\_6
- Geiger, V., & Frejd, P. (2015). A reflection on mathematical modelling and applications as a field of research: Theoretical orientation and diversity. In G. Stillman, G. Kaiser & W. Blum (Eds.), *Mathematical modelling in educational research and practice: Cultural, social and cognitive influences* (pp. 161-172). Dordrecht: Springer. DOI 10.1007/978-3-319-18272-8
- Stillman, G., Brown, J., & Geiger, V. (2015). Facilitating mathematisation in modelling by beginning modellers in secondary school. In G. Stillman, G. Kaiser & W. Blum (Eds.), *Mathematical modelling in educational research and practice: Cultural, social and cognitive influences* (pp. 93-104). Dordrecht: Springer. DOI 10.1007/978-3-319-18272-8
- Geiger, V. (2015). Mathematical modelling in Australia. In N. H. Lee & D. Ng (Eds.), *Mathematical modelling: From theory to practice* (73-82). Singapore: World Scientific. DOI: 10.1142/9789814546928\_00
- Geiger, V., Goos, M., & Dole, S. (2014). Curriculum intent, teacher professional development and student learning in numeracy. In Y. Li & G. Lappan (Eds.) *Mathematics curriculum in school education* (pp. 473-492). New York: Springer.
- Goos, M., Geiger, V., & Dole, S. (2014). Transforming professional practice in numeracy teaching. In Y. Li, E. Silver & S. Li (Eds.), *Transforming mathematics instruction: Multiple approaches and practices* (pp. 81-102). New York: Springer.
- Geiger, V. (2013). Mathematical applications, modelling and technology as windows into industry based mathematical practice. In A. Damlamian, J. F. Rodrigues & R. Straesser (Eds.), *Educational interfaces between mathematics and industry* (20th ICMI Study) (pp. 271-278). New York: Springer.
- Geiger, V., Goos, M. & Dole, S. (2013). Taking advantage of incidental school events to engage with the applications of mathematics: The case of surviving the reconstruction. In G. Stillman, G. Kaiser, W. Blum & J. Brown (Eds.), *Teaching mathematical modelling: Connecting to research and practice* (pp. 175-184). Dordrecht: Springer.
- Geiger, V. (2013). Strässer's didactic tetrahedron as a basis for theorising mathematical modelling activity within social contexts. In G. Stillman, G. Kaiser, W. Blum & J. Brown (Eds.), *Teaching mathematical modelling: Connecting to research and practice* (pp. 107-116). Dordrecht: Springer.
- Geiger, V. (2013). Teacher professional development on mathematical modelling: Initial perspectives from Singapore. In G. Stillman, G. Kaiser, W. Blum & J. Brown (Eds.), *Teaching mathematical modelling: Connecting to research and practice* (pp. 437-442). Dordrecht: Springer.
- Stillman, G., Brown, J., Faragher, R., Geiger, V., & Galbraith, P. (2013). The role of textbooks in developing a socio-critical perspective on mathematical modelling in secondary classrooms. In G. Stillman, G. Kaiser, W. Blum & J. Brown (Eds.), *Teaching mathematical modelling: Connecting to research and practice* (pp. 361-371). Dordrecht: Springer.
- Geiger, V., Forgasz, H., Calder, N., Tan, H. & Hill, J. (2012). Technology in mathematics education. In R. Perry & T. Lowry (Eds.), *Research in mathematics education in Australasia 2008-2011* (pp. 111-142). Rotterdam: Sense.
- Lamb, J., & Geiger, V. (2012). Teaching experiments and professional learning. In N. Steel, (Ed.), *Encyclopedia of the sciences of learning*, (Part 20, pp. 3276-3277). New York: Springer. DOI: 10.1007/978-1-4419-1428-6\_1017.
- Geiger, V. (2011). Factors affecting teachers' adoption of innovative practices with technology and mathematical modelling. In G. Kaiser, W. Blum, R. Borromeo Ferri & G. Stillman (Eds.), *Trends in the teaching and learning of mathematical modelling* (pp. 305-314). New York: Springer.
- Beatty, R., & Geiger, V. (2010). Technology, communication and collaboration: Re-thinking communities of inquiry, learning and practice. In C. Hoyles & J-B. Lagrange (Eds.), *Mathematics education and technology: Rethinking the terrain* (pp. 251-284). New York: Springer.

### Articles (selected from 2008)

- Geiger, V., (2019, online first). Using mathematics as evidence supporting critical reasoning and enquiry in primary science classrooms. *ZDM—Mathematics Education*. <https://doi.org/10.1007/s11858-019-01068-2>
- Shahaeian, A., Wang, C., Tucker-Drob, E., Geiger, V., Bus, A., & Harrison, L. (2018). Early shared reading, socioeconomic status, and children's cognitive and school competencies: Six years of longitudinal evidence. *Scientific Studies of reading*, 22(6), 485-502. Doi: 10.1080/10888438.2018.1482901
- Geiger, V., Magolinas, C., & Straesser, R. (2018). Le défi de la publication en contexte anglophone de didactiens des mathématiques dont la langue Dominante n'est pas l'anglais. *Recherches en Didactique des Mathématiques*, 38(1), 15-42.

- Geiger, V., Mulligan, J., Date-Huxtable, L., Ahlip, R., Jones, D. H., May, E. J., Rylands, L., & Wright, I. (2018). An interdisciplinary approach to designing online learning: fostering pre-service mathematics teachers' capabilities in mathematical modelling. *ZDM–Mathematics Education*, 50(1-2), 217-232.
- Geiger, V., Stillman, G., Brown, J., Galbraith, P., & Niss, M. (2018). Using mathematics to solve real world problems: The Role of Enablers. *Mathematics Education Research Journal*, 30(1), 7-19. DOI 10.1007/s13394-017-0217-3
- Bilgin, A., Date-Huxtable, E., Coady, C., Geiger, V., Cavanagh, M., Mulligan, J., & Petocz, P. (2017). Opening real science: Evaluation of an online module on statistical literacy for pre-service primary teachers. *Statistics Education Research Journal*, 16(1), 120-138.
- Geiger, V., Margolinas, C., & Straesser, R. (2017). On the challenges of multi-linguisme in mathematics education research. *For The Learning of Mathematics*, 37(2), 16-18.
- Bilgin, A., Date-Huxtable, E., Coady, C., Geiger, V., Cavanagh, M., Mulligan, J., & Petocz, P. (2017). Opening real science: Evaluation of an online module on statistical literacy for pre-service primary teachers. *Statistics Education Research Journal*, 16(1), 120-138.
- Geiger, V., Anderson, J., & Hurrel, D. (2017). A case study of effective practice in mathematics teaching and learning informed by Valsiner's Zone Theory. *Mathematics Education Research Journal*, 29(2), 143-161. DOI:10.1007/s13394-017-0191-9
- Geiger, V., Muir, T., & Lamb, J. (2016). Video stimulated recall as a catalyst for teacher professional learning. *Journal of Mathematics Teacher Education*. 19, 457-475. DOI: 10.1007/s10857-015-9306-y
- Muir, T., & Geiger, V. (2016). The affordances of using a flipped classroom approach in the teaching of mathematics: A case study of a grade 10 mathematics class. *Mathematics Education Research Journal*, 28(1), 149-171.
- Geiger, V., Goos, M., & Forgasz, H. (2015). A rich interpretation of numeracy for the 21st Century: A survey of the state of the field. *ZDM–Mathematics Education*, 47(4), 531-548. 10.1007/s11858-015-0708-1
- Geiger, V., Forgasz, H., & Goos, M. (2015). A critical orientation to numeracy across the curriculum. *ZDM–Mathematics Education*, 47(4), 611-624. doi: 10.1007/s11858-014-0648-1
- Geiger, V., Goos, M., & Dole, S. (2015). The role of digital technologies in numeracy teaching and learning. *International Journal of Science and Mathematics Education*, 13(5), 1115-1137. doi: 10.1007/s10763-014-9530-4
- Geiger, V., & Straesser, R. (2015). The challenge of publication for English non-dominant-language authors in mathematics education. *For The Learning of Mathematics*, 35(3), 35-41.
- Goos, M., & Geiger, V. (2012). Connecting social perspectives on mathematics teacher education in online environments. *ZDM – The International Journal in Mathematics Education*, 44(6), 705-715. doi: 10.1007/s11858-012-0441-y
- Goos, M., Geiger, V., & Dole, S. (2012). Auditing the numeracy demands of the middle years' curriculum. *PNA*, 6(4), 147-158.
- Goos, M., Dole, S., & Geiger, V. (2011). Improving numeracy education in rural schools: A professional development approach. *Mathematics Education Research Journal*, 23(2), 129-148.
- Geiger, V., Faragher, R., & Goos, M. (2010). CAS-enabled technologies as 'agents provocateurs' in teaching and learning mathematical modelling in secondary school classrooms. *Mathematics Education Research Journal*, 22(2), 48-68.
- Goos, M., & Geiger, V. (2010). Theoretical perspectives on mathematics teacher change. *Journal of Mathematics Teacher Education*, 13(6), 499-507.
- Gadanidis, G., & Geiger, V. (2010). A social perspective on technology enhanced mathematical learning – from collaboration to performance. *ZDM – The International Journal in Mathematics Education*, 42(1), 91-104.

### **Refereed conference papers (selected from 2008)**

- Geiger, V. (2017). The convoluted nature of a research impact pathway. In A. Downton, S. Livy & J. Hall (Eds.), *40 years on: We are still learning!* (Proceedings of the 40th Annual Conference of the Mathematics Education Research Group of Australasia, pp. 634-637). Melbourne: MERGA.
- Geiger, V., & Mulligan, J. (2017). An interdisciplinary approach to mathematical modeling in secondary school education. In Kaur, B., Ho, W.K., Toh, T.L. & Choy, B.H. (Eds.), *Proceedings of the 41st Conference of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 337-344). Singapore: PME.
- Geiger, V., Date-Huxtable, L., Ahlip, R., Herberstein, M., Jones, D., H., May, J., Rylands, L., Wright, I. & Mulligan, J. (2016). Designing Online Learning for Developing Pre-service Teachers' Capabilities in Mathematical Modelling and Applications. In B. White, M. Chinnappan & S. Trenholm (Eds.), *Opening Up Mathematics Education Research* (Proceedings of the 39th annual conference of the Mathematics Education Research Group of Australasia, pp. 260-268). Adelaide: MERGA.
- Geiger, V. (2016). Teachers as designers of effective numeracy tasks. In B. White, M. Chinnappan & S. Trenholm (Eds.), *Opening Up Mathematics Education Research* (Proceedings of the 39th annual



- conference of the Mathematics Education Research Group of Australasia, pp. 252-259). Adelaide: MERGA.
- Leder, G., Forgasz, H., Kalkhoven, N., & Geiger, V. (2015). Pre-service teachers and numeracy in and beyond the classroom. In M. Marshman, V. Geiger & A. Bennison (Eds.), *Mathematics education in the margins* (Proceedings of the 39th annual conference of the Mathematics Education Research Group of Australasia, pp. 349-356). Sunshine Coast: MERGA.
- Geiger, V., & Straesser R. (2015). The challenge for non-first-language-English academic publishing in English language research outlets. In M. Marshman, V. Geiger & A. Bennison (Eds.), *Mathematics education in the margins* (Proceedings of the 39th annual conference of the Mathematics Education Research Group of Australasia, pp. 245-252). Sunshine Coast: MERGA.
- Goos, M., Geiger, V., & Bennison, A. (2015). Conceptualising and enacting numeracy across the curriculum. In K. Beswick, T. Muir & J. Wells (Eds.), *Proceedings of the 39th conference of the International Group for the Psychology of Mathematics Education* (Vol. 3, pp. 9-16). Hobart, Tasmania: PME.
- Forgasz, H., Leder, G., Geiger, V., & Kalkhoven, N. (2015). Pre-service teachers and numeracy readiness. In K. Beswick, T. Muir & J. Wells (Eds.), *Proceedings of the 39th conference of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 361-368). Hobart, Tasmania: PME.
- Geiger, V., Goos, M., Dole, S., Forgasz, H., & Bennison, A. (2014). Devising principles of design for numeracy tasks. In J. Anderson, M. Cavanagh & A. Prescott (Eds.), *Curriculum in focus: Research guided practice* (Proceedings of the 37th annual conference of the Mathematics Education Research Group of Australasia, pp. 239-246). Sydney: MERGA.
- Cai, J., Cirillo, M., Pelesko, J., Borromeo Ferri, R., Borba, M., Geiger, V., Stillman, G., English, L., Wake, G., Kaiser, G., & Kwon, O. (2014). Mathematical modeling in school education: Mathematical, cognitive, curricular, instructional, and teacher education perspectives. In P. Liljedahl, C. Nicol, S. Oesterle & D. Allen (Eds.), *Proceedings of the Joint Meeting of PME 38 and PME-NA 36*, Vol 1, pp. 145-172. Vancouver, Canada: PME.
- Geiger, V., & Redmond, T. (2013). Designing mathematical modelling tasks in a technology rich secondary school context. In C Margolinas (Ed), *Task design in mathematics education* (The 22st ICME study conference, pp. 119-128). Oxford: ICME.
- Goos, M., Geiger, V., & Dole, S. (2013). Designing Rich Numeracy Tasks. In C Margolinas (Ed), *Task design in mathematics education* (The 22st ICME study conference, pp. 589-598). Oxford: ICME.
- Geiger, V., Goos, M., Dole, S., Forgasz, H., & Bennison, A. (2013). Exploring the demands and opportunities for numeracy in the Australian Curriculum: English. In V. Steinle, L. Ball, & C. Bardini (Eds.), *Mathematics education: Yesterday, today and tomorrow* (Proceedings of the 36th annual conference of the Mathematics Education Research Group of Australasia, Vol. 1, pp. 330-337). Melbourne: MERGA.
- Geiger, V. (2012). On considering alternative frameworks for examining modelling and application activity: The role of texts and digital tools in the process of mathematical modeling. In J. Brown & T. Ikeda (Eds.), *Preconference proceedings of the 12th International Congress on Mathematical Education* (Topic Study Group 17: Mathematical applications and modelling in the teaching and learning of mathematics, pp. 3234-3244). Seoul, Korea: ICME. [http://icme12.org/data/ICME12\\_Pre-proceedings.zip](http://icme12.org/data/ICME12_Pre-proceedings.zip).
- Easey, M., Warren, E., & Geiger, V. (2012). Male students perspectives concerning the relevance of mathematics: Pilot study findings. In J. Dindyl, L. P. Cheng & S. F. Ng (Eds.), *Mathematics education: Expanding horizons* (Proceedings of the 35th annual conference of the Mathematics Education Research Group of Australasia, Singapore, pp. 242-249). Singapore: MERGA.
- Goos, M., Geiger, V., & Dole, S. (2012). Auditing the numeracy demands of the Australian Curriculum. In J. Dindyl, L. P. Cheng & S. F. Ng (Eds.), *Mathematics education: Expanding horizons* (Proceedings of the 35th annual conference of the Mathematics Education Research Group of Australasia, pp. 314-321). Singapore: MERGA.
- Geiger, V., Goos, M., & Dole (2011). Trajectories into professional learning in numeracy teaching. In J. Clarke, B. Kissane, J. Mousely, T. Spencer & S. Thornton (Eds.), *Traditions and (new) practices* (Proceedings of the 34th annual conference of the Mathematics Education Research Group of Australasia, pp. 297-305). Alice Springs: MERGA.
- Geiger, V., Goos, M., & Dole, S. (2011). The role of digital technologies in teaching numeracy learning. In B. Ubuz (Ed.), *Proceedings of the 35th conference of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 385-392). Ankara, Turkey: PME.
- Goos, M., Geiger, V., & Dole, S. (2011). Teachers' personal conceptions of numeracy. In B. Ubuz (Ed.), *Proceedings of the 35th conference of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 457-464). Ankara, Turkey: PME.
- Lamb, J., & Geiger, V. (2010). A teacher pair approach to adopting effective numeracy teaching practice. In L. Sparrow, B. Kissane & C. Hurst (Eds.), *Shaping the future of mathematics education* (Proceedings of the 33rd annual conference of the Mathematics Education Research Group of Australasia, Fremantle, pp. 312-319). Fremantle: MERGA.

- Goos, M., Geiger, V., & Dole, S. (2010). Auditing the numeracy demands of the middle years curriculum. In L. Sparrow, B. Kissane & C. Hurst (Eds.), *Shaping the future of mathematics education* (Proceedings of the 33rd annual conference of the Mathematics Education Research Group of Australasia, pp. 210-217). Fremantle: MERGA
- Geiger, V., Jacobs, R., Lamb, J., & Mulholland, J. (2009). An approach to student-lecturer collaboration in the design of assessment criteria and standards schemes. In J. Milton, C. Hall, J. Lang, G. Allan & M. Nomikoudis (Eds.), *ATN assessment conference 2009: Assessment in different dimensions* (pp. 137-145). RMIT University, Melbourne.
- Geiger, V. (2009). The master, servant, partner, extension-of-self framework in individual, small group and whole class contexts. In R. Hunter, B. Bicknell & T. Burgess (Eds.), *Crossing divides* (Proceedings of the 32nd annual conference of the Mathematics Education Research Group of Australasia, pp. 201-208). Wellington: MERGA.
- Geiger, V., Faragher, R., Redmond, T., & Lowe, J. (2008). CAS enabled devices as provocative agents in the process of mathematical modelling. In M. Goos, R. Brown, & K. Maker (Eds.), *Navigating currents and charting directions* (Proceedings of the 31st annual conference of the Mathematics Education Research Group of Australasia, pp. 246-253). Brisbane: MERGA.
- Geiger, V., Faragher, R., Goos, M., Lowe, J., & Redmond, T. (2008). CAS enabled devices as provocative agents in the process of mathematical modelling. In C. Laborde & C. Kynigos (Eds.), *Proceedings of the 11th International Congress on Mathematical Education* (Topic study group 22: New technologies in the teaching and learning of mathematics), Monterrey. Retrieved 15 April 2008 from <http://tsg.icme11.org/tsg/show/23>.
- Geiger, V. (2008). The emergence of social perspectives on the use of technology in mathematics education. In M. Borba & M. Martolini (Eds.), *Proceedings of the symposium on the occasion of the 100th anniversary of ICMI* (Working group 4: Resources and technology throughout the history of ICMI), Rome. Retrieved 15 April 2008 from <http://www.unige.ch/math/EnsMath/Rome2008/WG4/Papers/GEIGER.pdf>.

## Conferences

- Goos, M., Forgasz, H., & Geiger, V. (2014). Discussion Group on Numeracy across the curriculum. In P. Liljedahl, C. Nicol, S. Oesterle & D. Allen (Eds.), *Proceedings of the Joint Meeting of PME 38 and PME-NA 36*, Vol 1, p. 241. Vancouver, Canada: PME.
- Goos, M., Dole, S., & Geiger, V. (2010). Numeracy across the curriculum. In M. Pinto & T. Kawasaki (Eds.), *Proceedings of the 34th conference of the International Group for the Psychology of Mathematics Education*, Vol. 2, p. 39. Belo Horizonte, Brazil: PME.
- Geiger, V. (2008). The developing influence of social theories of learning on technology enhanced mathematics classrooms. In P. Jeffery (Ed.), *Proceedings of the annual conference of the Australian Association of Research in Education*, Brisbane. Retrieved 15 April 2008 from <http://www.aare.edu.au/08pap/gei08969.pdf>.
- Geiger, V. (2005). Mathematics, technology and the middle school: Servant, master or collaborator? In W. Morony & C. Stocks (Eds.), *Quality mathematics in the middle years* (Proceedings of the national conference, pp. 94-99) Fremantle: AAMT.
- Geiger, V., McNamara, R., & Valley, P. (2003). Tests without marks: A criteria-based approach to providing students with meaningful feedback. In M. Goos & T. Spencer (Eds.), *Mathematics: Creating the future* (Proceedings of 19th Biennial Conference of the Australian Association of Mathematics Teachers, Brisbane). Adelaide: AAMT.
- Goos, M., Galbraith, P., Renshaw, P., & Geiger, V. (2001). Promoting collaborative inquiry in technology enriched mathematics classrooms. Paper presented at the *Annual Meeting of the American Educational Research Association*, Seattle, USA: AERA. (ERIC Document Number ED454055).
- Geiger, V., & Morony (2000). Collected wisdom – directions from the AAMT's conference on graphics calculators and school mathematics. Presentation at the *Third International Virtual Conference on Mathematics Education Teaching and Learning in World Mathematics Year 2000: Exploring the possibilities*. (sponsored by the Australian Association of Mathematics Teachers), August/September 2000.
- Goos, M., Galbraith, P., Renshaw, P., & Geiger, V. (2000). Classroom voices: Technology enriched interactions in a community of mathematical practice. Paper presented to Working Group for Action 11 (The Use of Technology in Mathematics Education) at the *9th International Congress on Mathematical Education*, Tokyo/Makuhari, 31 July – 6 August 2000.
- Galbraith, P., Goos, M., Renshaw, P., & Geiger, V. (2000). Emergent properties of teaching-learning in technology-enriched classrooms (Short communication). In J. Bana & A. Chapman (Eds.), *Mathematics Education Beyond 2000* (Proceedings of the 23rd Annual Conference of the Mathematics Education Research Group of Australasia, Fremantle, p.690). Sydney: MERGA.
- Goos, M., & Geiger, V. (1999). Choosing and using technology: What can teachers learn from students' learning? Paper presented at the *Annual Conference of the Queensland Association of Mathematics*

Teachers, Rockhampton, Qld, 29 September–1 October 1999. Available <http://qamt.cqu.edu.au/Proceedings/Texts.html>.

- Geiger, V. (1999). The Euclidean phoenix – The rediscovery of geometric thinking. In K. Baldwin & J. Roberts (Eds.), *Mathematics: The next millennium* (Proceedings of 17th Biennial Conference of the Australian Association of Mathematics Teachers, Adelaide). Adelaide: AAMT.
- Geiger, V. (1999). Students' Use of Technology in Applications – Partners, Masters or Slaves? Invited presentation at the *Investigating the investigative: Some issues and themes in contemporary open-ended approaches to mathematics in schools* (2nd International Virtual Conference on Mathematics Education, sponsored by the Australian Association of Mathematics Teachers). AAMT
- Geiger, V. (1998). The Sub-AToMIC Project. Invited presentation at Technology and the Classroom (the 1st International Virtual Conference on Mathematics Education, sponsored by the Australian Association of Mathematics Teachers). AAMT.
- Geiger, V. (1997). I'm afraid to ask: Have we gone electric? – The necessary reconsideration of the secondary school mathematics curriculum in the wake of graphing calculator technology. In N. Scott & H. Hollingsworth (Eds.), *Mathematics: Creating the Future* (Proceedings of 16th Biennial Conference of the Australian Association of Mathematics Teachers). Melbourne: AAMT.
- Geiger, V., & McKinlay, J. (1995). Duelling geometers. In G. Gillman, K. Milton & J. Oliver (Eds.), *Flair: Forging links and integrating resources* (Proceedings of 15th Biennial Conference of the Australian Association of Mathematics Teachers). Darwin: AAMT.

## Reports

- Geiger, V., Gleeson, J., & Effeney, G. (2016). *Education for sustainability in BCE schools: An investigation of policy and practice*. Unpublished project report – sponsored by Brisbane Catholic Education.
- Goos, M., Geiger, V., & Bennison, A. (2015). *Numeracy teaching across the curriculum in Queensland: Resources for teachers*. Final report. Brisbane: The University of Queensland.
- Geiger, V., & Goos, M. (2013). *Make it count: Numeracy, mathematics and Indigenous learners*. Unpublished project report – sponsored by the Australian Association of Mathematics Teachers.
- Lamb, J., Geiger, V., Branson, J., & Jorgensen, R. (2012). *Models of leading curriculum reform in numeracy*. Unpublished project report – sponsored by the Brisbane Catholic Education and Australian Catholic University.
- Goos, M., Geiger, V., & Dole, S. (2012). *Sustaining numeracy curriculum leadership: A whole school approach*. Unpublished project report – sponsored by Brisbane Catholic Education.
- Goos, M., Geiger, V., & Dole, S. (2010). *Numeracy in the learning areas*. Unpublished project report – sponsored by the South Australian Department of Education and Children's Services.

## Theses

### Completions

#### Doctor of Philosophy

- Peta Spencer (2018). How teaching representations and/or resources (virtual, concrete and symbolic) of mathematical concepts influence Indigenous students' learning ACU, Co-supervisor
- Jodie Miller (2014). Young Indigenous students' experiences in mathematics: An exploration in students' ability to generalize. ACU, Co-supervisor

#### Master of Education (Research)

- Colin Colin (2013). Church planting in Australia: How training and coaching affects the leadership of church planting in Australia. ACU, Principal supervisor

## Scholarly contributions and service

### Editorial roles

Role	Publication	Dates
Guest Editor	ZDM–Mathematics Education (Mathematics and STEM Education)	2018-2019
Associate Editor	Mathematics Education Research Journal	2013-2018
Editor	Conference proceedings for the 38th annual conference of the Mathematics Education Research Group of Australasia	2015
Guest Editor	ZDM–Mathematics Education (Numeracy)	2014-2015
Member of editorial team	Journal of Mathematics Teacher Education (Special issue on Teacher Change)	2009-2010



## Editorial board memberships

- International Journal of Science and Mathematics Education

## Fellowships, awards and memberships

### Fellowships

- Discovery Early Career Award (2015-2017). Australian Research Council – Designing and implementing cross-curricular numeracy tasks for effective teaching and learning.

### Awards

- Giovani Prodi Guest Professorship (2018-2019). Wurzburg University, Germany.
- Mathematics Education Research Group of Australasia Research Award (2017). Significant recent contribution to mathematics education research.
- Research Excellence Award (2015). Australian Catholic University Faculty of Education and Arts.
- ALTC Citation (2009). Project: WebCT as a pedagogical resource and communicative tool for use in the professional experience program.
- Practical Implications Award (1995). Mathematics Education Research Group of Australasia.

### Memberships

- Mathematics Education Research Group of Australasia.
- Australian Association of Mathematics Teachers.
- Queensland Association of Mathematics Teachers.

## Invited reviewer

- Educational Studies in Mathematics
- Journal of Mathematics Teacher Education
- Mathematical Thinking and Learning
- International Journal of Science and Mathematics Education
- ZDM – The International Journal on Mathematics Education
- Mathematics Education Research Journal
- Mathematics Teacher Education and Development

## Scholarly contribution (since 2008)

### Keynote, Plenary and Invited Addresses

- Geiger, V. (2019, March). Numeracy tasks that count. Keynote presented at the *Numerate futures conference* sponsored by the Contemporary Learning Hub. Sunshine Coast, Australia.
- Geiger, V. (2019, March). Developing effective numeracy tasks. Keynote presented at the *Numerate futures leadership summit* sponsored by the Contemporary Learning Hub. Sunshine Coast, Australia.
- Geiger, V. (2018, November). Designing tasks for students across the curriculum, adults' mathematical literacy and generating STEM capability sets, *The Giovanni Prodi Lecture*, Wurzburg University, Germany.
- Geiger, V. (2018, November). Being literate is being critical. Invited invitation at *Numeracy as a part of adult (basic) education: International and comparative perspectives*. Hamburg, Germany.
- Geiger, V. (2018, July). Making mathematics useful: Exploring numeracy across the curriculum. Keynote presented at the NuMa Professional Learning Conference, sponsored by Brisbane Catholic Education. Brisbane, Australia.
- Geiger, V. (2017, July). Response to keynote: Jarmila Novotna, Problem solving through heuristic strategies as away to make all pupils engaged at *The 41st Conference of the International Group for the Psychology of Mathematics Education*. Singapore.
- Geiger, V. (2017, July). Response to keynote: Cyril Julie, The deployment of Mathematics in areas other than those normally associated with mathematical modelling and the applications of mathematics at the *International Conference on the Teaching of Mathematical Modelling and Applications (ICTMA-18)*. Cape Town South Africa
- Geiger, V., Goos, M. & Forgasz, H. (2016, July). Mathematical Literacy from and International Perspective. Plenary presented within the ICME Topic Study Group Mathematical Literacy at the *Thirteenth Congress on Mathematics Education*. Hamburg, Germany.
- Geiger, V., Goos, M. & Miller, J. (2016, July). Establishing and developing a research career. Invited presentation at the *Mathematics Education Research Group of Australasia annual conference*. Adelaide, Australia.
- Geiger, V. (2016, July). Publishing in international mathematics education journals. Invited presentation and workshop for early career researchers at the *Thirteenth International Congress on Mathematics Education*. Hamburg, Germany.

- Geiger, V. (2015, September). Enhancing the Opportunities of Curriculum Change: Introducing Numeracy across the Curriculum. Keynote presentation at the *Action Learning Research in Literacy and Numeracy Conference* sponsored by Brisbane Catholic Education. Brisbane, Australia.
- Geiger, V., (2015, July). Modelling in curricula across the world. Invited plenary panel presentation (with H. Doerr, A Dominguez, P Vos, H. Wessels & W. Blum) at *Modelling perspectives: Looking in and across boundaries* (17th International Conference on the Teaching of Mathematical Modelling and Applications). Nottingham, United Kingdom.
- Geiger, V. & Muir, T. (2015, July). Publishing in international mathematics education journals. Invited presentation and workshop for early career researchers at the *39th conference of the International Group for the Psychology of Mathematics Education*. Hobart, Australia.
- Geiger, V. (2015, June). Co-constructing a shared numeracy philosophy in initial teacher education. Plenary panel presentation (with P. Grootenboer & S. Dole) at the *Queensland Numeracy Summit 2015: Initial Teacher Education*. Brisbane, Australia.
- Goos, M., Geiger, V., & Dole, S. (2015, June). Research on embedding numeracy across the curriculum. Keynote presentation at the *Queensland College of Teachers Numeracy Forum*. Brisbane, Australia.
- Geiger, V. (2012, September). A model for numeracy translated into practical ideas and activities. Keynote presented at the *Archdiocesan CTP action learning conference* sponsored by Brisbane Catholic Education. Brisbane, Australia.
- Goos, M. & Geiger, V. (2010, September). A rich approach to numeracy across the curriculum. Keynote address presented at *Building quality teaching: Action leaning projects in literacy and numeracy* sponsored by Brisbane Catholic Education. Brisbane, Australia.
- Geiger, V. (2010, June). Mathematical modelling in Australia. Plenary panel presentation at the *Lee Peng Yee Symposium*. National Institute of Education, Singapore

## Service internal

### Leadership

- Deputy Director – ACU Mathematics Teaching and Learning Research Centre (2012-2013)
- Assistant/Deputy Head of School (Research): School of Education, Australian Catholic University (Brisbane Campus) (2012-2013)
- Secondary Programs Coordinator and Professional Experience Coordinator (DipEd, MTeach, BT/BA): Australian Catholic University (Brisbane Campus) (2007-2010)
- Secondary Professional Experience Coordinator – Graduate Diploma of Education, Master of Teaching, Bachelor of Teaching/Bachelor of Arts (2007-2010)

### Committees and panels

- Member – ACU ERA Expert Panel (2014)
- Member – ACU Faculty Research Standing Committee (2010-2013)
- Chair – ACU School of Education (Qld) Research Committee (2011-2013)
- Leader ACU Research Support Team (Qld) (2010-2012)
- Member- ACU Queensland School Executive Committee (2007-2013)
- Member – ACU Faculty Advisory Committee (Qld) (2007-2013)
- Member – National Secondary Programs Review Committee (2007-2010)
- Member – School Professional Experience Committee (2007-2010)

## Service external

### International

- Member of the organizing team for the Mathematical Literacy Topic Study Group at the International Conference on Mathematics Education. (2018-2020)
- Member of the organizing team for the Mathematical Literacy Topic Study Group at the International Conference on Mathematics Education (2013-2016)

### National

- Assessor for the Australian Research Council (2013-present)
- Secretary – Mathematics Education Research Group of Australasia (2009-2012)
- Chair – National Education Forum (2001-2002)
- President – Australian Association of Mathematics Teachers (2000-2001)
- Member – Advisory Committee of the Australian College of Educators for the development of a statement on professional teaching standards (2000)