APPENDIX B

CURRICULUM VITAE

ROBERT W. BRANDER BSc MSc PhD

CAREER SUMMARY & HIGHLIGHTS

RESEARCH

- PhD in Coastal Morphodynamics with significant international research profile & publication record
- Google Scholar h-index = 33; i10-index = 68; Citations = 4108 as of March 2023
- 15 scholarly book chapters, 82 international refereed journal papers and 32 internationally refereed conference papers/abstracts
- > 1,000,000 in external research funding including Australian Research Council (ARC) funding (\$676,000).
- 36 years research experience in coastal geomorphology and beach safety science
- Director UNSW Beach Safety Research Group (ww.beachsafetyresearch.com)
- 2012 Australian Government Eureka Prize winner for Promoting Understanding of Australian Scientific Research

TEACHING

- Consistently high undergraduate teaching and course evaluation scores
- Course co-ordinator of major first year Physical Geography/Environmental Science course (100+ students) since 1998
- \$120,000 of UNSW Strategic Educational Development Funding since 2015
- UNSW Faculty of Science Excellence in Teaching Award 2011
- Supervision of 6 HDR & 27 Honours students
- Post-Graduate Co-ordinator UNSW Sydney School of BEES 2014-2016

SERVICE & OUTREACH

- Appointed as a Member of the Order Australia (AM) on January 26, 2023 for service to coastal science, and to the community, through beach safety research and education
- Facilitator of the multi-award winning community education program 'Science of the Surf (SOS) since 2001. SOS presentations given to over 50,000 people.

- Significant mainstream and social media profile in promoting public understanding of rip current science and beach safety hazards. Known as 'Dr Rip'.
- Educational beach safety related YouTube videos with > 2.2 million views
- 2018 National Geographic documentary 'Rip Current Heroes' and 2022 US PBS documentary 'Rip Current Rescue' and associated Study Guides
- Author of 2010 bestselling book Dr Rip's Essential Beach Book
- Rip current education websites at www.scienceofthesurf.com and <a href="https://www.scienceofthes

PRESENT WORK DETAILS

Professor, School of Biological, Earth and Environmental Sciences (BEES), UNSW Sydney, NSW 2052, Australia.



Present Roles and Associated Research Centres:

- Director of UNSW Beach Safety Research Group (UNSW BSRG)
- Member of UNSW Centre for Marine Science and Innovation (CMSI)
- Member UNSW Earth and Sustainability Science Research Centre (ESSRC)

EDUCATION

PhD in Marine Science – *Field Observations on the Morphodynamics of Rip Currents* (1993 – 1997), Department of Geography, University of Sydney, Australia

MSc in Geography – Bedform Constraints on Sediment Re-suspension and Transport under Shoaling and Breaking Waves (1989 - 1991), University of Toronto, Canada

BSc in Geography - (1984 - 1989), University of Toronto, Canada

EMPLOYMENT HISTORY

1) Professor Nov 2018 – ongoing

School of Biological, Earth and Environmental Sciences, UNSW Sydney

2) Associate Professor Sept 2013 – Nov 2018

School of Biological, Earth and Environmental Sciences, UNSW Sydney

3) ADJUNCT ASSOCIATE PROFESSOR

OCT 2016 - ONGOING

College of Public Health, Medical and Veterinary Sciences, JCU

4) SENIOR LECTURER

JAN 2008 - SEPT 2013

School of Biological, Earth and Environmental Sciences, UNSW

5) NEW SOUTH WALES DEPARTMENT OF EDUCATION SCHOOL PERFORMER

JUNE 2006 - DEC 2007

On Leave Without Pay from UNSW

6) GHD CONSULTING, NEWCASTLE, NSW

JAN 2006 - MAY 2006

On Leave Without Pay from UNSW

7) SENIOR LECTURER

JUNE 2004 – DEC 2005

School of Biological, Earth and Environmental Sciences, UNSW

8) LECTURER

JULY 2000 - MAY 2004

School of Geography; School of Biological, Earth and Environmental Sciences

9) LECTURER

JULY 1998 – JUNE 2000

School of Earth Sciences, Victoria University of Wellington, New Zealand

10) ARC Research Associate

Jan 1997 – June 1998

Department of Geography, University of Sydney

11) CASUAL LECTURER AND TUTOR

FEB 1993 - DEC 1996

Department of Geography, University of Sydney

12) Teaching Assistant

Sept 1989 - Sept 1991

Department of Geography, University of Toronto

Additional Supporting Material

INTERESTS & EXPERTISE

Who am I and what do I do?

- I'm an internationally recognised coastal geomorphologist, rip current and beach safety scientist and science communicator.
- My fieldwork in beach surf zones and coral reef environments has led to key advances in the understanding of rip current and coral reef island morphodynamics.
- More recently I have attempted to combine a physical understanding of surf zone
 processes and natural hazards, such as rip currents, with a social science
 approach in order to improve understanding of human interactions with these
 processes/hazards. This has resulted in my pioneering of a new field of coastal
 research termed 'Beach Safety Research'
- I run an extremely successful community based beach safety education program called 'The Science of the Surf' and have now managed to incorporate that into active research.
- The goals of my work are to:
 - ✓ Explore and develop the interface between physical geoscience and social research in the context of beach and surf zone hazards; Improve understanding of beach and surf zone processes in relation to hazards in order to reduce the incidence of drowning and injury along coasts; and
 - ✓ Develop meaningful and appropriate beach and coastal safety education interventions via research outcomes.

Research Interests & Expertise

- **Coupled human-environment systems** (interactions between beach hazards and socio-demographic and behavioural systems, assessing understanding of public knowledge of coastal hazards)
- **Beach and surf zone safety** (hazard assessment, hazard and human interaction, development and assessment of public education interventions, effective communication strategies)
- **Coastal hazards** (rip currents, waves, storms and storm erosion)
- **Coastal geomorphology and processes** (beach and surf zone morphodynamics, coral reef island and reef morphodynamics, field based studies)
- Communicating and promoting science to the public

PART ONE - RESEARCH

1.1 PUBLICATIONS

BOOKS, REFEREED BOOK CHAPTERS & BOOK REVIEWS (n = 15)

- Short, A.D., **Brander, R.W.** (Eds.) (2020). Stories from the Field: 50 Years of Coastal Fieldwork 1970-2020. Journal of Coastal Research, Special Issue No. 101. Allen Press, Lawrence KS, 432 p. https://meridian.allenpress.com/jcr/issue/101/SI
- **Brander, R.W**. (2018). Beach Safety Research. In: *The Encyclopedia of Coastal Science*. (Eds. C. Finkl, C.Makowski), Encyclopedia of Earth Science Series, Springer, Cham. https://doi.org/10.1007/978-3-319-93806-6 40
- **Brander, R.W.** (2018). Rip Currents. In: *The Encyclopedia of Coastal Science* (Eds. C. Finkl, C.Makowski), Encyclopedia of Earth Science Series, Springer, Cham. https://doi.org/10.1007/978-3-319-93806-6261
- **Brander, R.W.** and Scott, T. (2016). Science of the Rip Current Hazard. In: *The Science of Beach Lifeguarding: Principles and Practice* (Eds. M. Tipton, A. Wooler and T. Reilly). CRC Press, Boca Raton. p. 67-85. ISBN 9780367787691
- **Brander, R.W.** (2015). Rip Currents. In: *Sea and Ocean Hazards, Risks and Disasters* (Eds. J. Ellis, D. Sherman). Treatise in Hazards and Disasters. Elsevier, p. 335-380. **ISBN:** 9780123964830
- **Brander, R.W.** and Hasnoot, T. (2014). Patterns of tides, currents, waves and surf. In: *Drowning, Rescue, Treatment,* 2nd Ed (Ed. Joost J.L.M. Bierens), Springer, p. 279-285. https://doi.org/10.1007/978-3-642-04253-9 40
- Short, A.D. and **Brander, R.W.** (2014). Beach hazard and risk assessment. In: *Drowning, Rescue, Treatment*, 2nd Ed (Ed. Joost J.L.M. Bierens), Springer, p. 287-291. https://doi.org/10.1007/978-3-642-04253-9 41
- **Brander, R.W.** (2014). Book Review: Sustainable coastal management and climate adaptation: global lessons from regional approaches in Australia. *Australian Geographer*, 45(2): 249-250 https://doi.org/10.1080/00049182.2014.899035
- **Brander, R.W.** (2011). Book Review: Introduction to Coastal Processes and Geomorphology by Robin Davidson-Arnott. *New Zealand Geographer*, 67: 227-228. https://doi.org/10.1111/j.1745-7939.2011.01215_3.x

- **Brander, R.W.** and MacMahan, J.H. (2011). Future challenges for rip current research and community outreach. In: *Rip Currents: Beach Safety, Physical Oceanography and Wave Modeling* (Eds. S. Leatherman and J. Fletemeyer). CRC Press, Boca Raton, Florida. pp. 1-29. *ISBN 9781439838969*
- **Brander, R.W.** (2010). *Dr Rip's Essential Beach Book; everything you need to know about surf, sand and rips.* UNSW Press, Sydney, Australia. ISBN 9781742230979
- **Brander, R.W.** (2005). Rip Currents. In: *The Encyclopedia of Coastal Science* (Ed. M. Schwartz), Kluwer Academic Publishers, pp. 811-813. https://doi.org/10.1007/1-4020-3880-1_261
- **Brander, R.W.** (2004). Coastal Bars. In: *The Encyclopedia of Geomorphology* (Ed. A. S. Goudie). Routledge Publishers, London, pp. 54-56. ISBN 0415327377
- **Brander, R.W.** (2004). Rip Currents. In: *The Encyclopedia of Geomorphology* (Ed. A.S. Goudie). Routledge Publishers, London, pp. 855-857. ISBN 0415327377
- **Brander, R.W.**, Osborne, P.D., and Parnell, K. (2003). High-energy beach and nearshore environments. In: *The New Zealand Coast: Te Tai O Aotearoa* (Eds: H.L. Rouse, J.R. Goff, and S. Nichol), Dunmore Press, Auckland, 119–142. ISBN 0864694385

REFEREED INTERNATIONAL JOURNAL PUBLICATIONS (n = 82)

2022

- Cornell, S., Brander, R.W., Roberts, A., Koon, W., Peden, A., Lawes, J.C. (2022). "I actually thought that I was going to die": lessons on the rip current hazard from survivor experiences. PLoS One, submitted (12/6/22).
- Koon, W., Clemens, T., Stewart, O., **Brander, R.W.**, Quan, L., Peden, A. (2022). The burden of fatal drowning in California, 2005-2019. *American Journal of Public Health*, submitted (6/5/22)
- Koon, W., Peden, A.E., Lawes, J.C., **Brander, R.W**. (2022). Mortality trends and the impact of exposure on Australian coastal drowning deaths, 2004-2021. *Australia and New Zealand Journal of Public Health*, submitted (6/6/22).
- Koon, W., Peden, A., Lawes, J.C., **Brander, R.W**. (2022). Improving coastal safety for international visitors to Australia. *Tourism Management*, submitted 30/10/22).
- Koon, W., Brander, R.W., Dusek, G., Castelle, B., Lawes, J.C. (2022). Relationships between the tide and fatal drowning at surf beaches in New South Wales, Australia: implications for coastal safety management and practice. *Ocean and Coastal Management*, submitted 29/10/22.
- Willcox-Pidgeon, S., Miller, Ll, Leggat, P.A., Peden, A., **Brander, R.W.**, Wilks, J., Franklin, R.C. (2022). The drowning risk profile of different types of tourists to Australia. *Australia New Zealand Journal of Public Health*, submitted 24/8/22)
- **Brander, R.W.,** Williamson, A., Dunn, N., Hatfield, J., Sherker, S., Hayen, A. (2022). Evaluating the effectiveness of a science-based community beach safety intervention: the Science of the Surf (SOS) presentation. *Continental Shelf Research*, 241:104722. https://doi.org/10.1016/j.csr.2022.104722
- Kamstra, P., Cook, B., **Brander, R.W.**, Lawes, J., Matthews, B., Calverly, H., Imperiale, A., Hooper, B. (2022). Awareness without learning: a preliminary study exploring the effects of beachgoers' experiences on risk taking behaviours. *Heliyon*, e12186 https://doi.org/10.1016/j.heliyon.2022.e12186
- Koon, W., **Brander, R.W.**, Alonzo, D., Peden, A.E. (2022). Lessons learned from co-designing a high school beach safety education program with lifeguards and students, Health Promotion Journal of Australia, submitted (1/7/2022). https://doi.org/10.1002/hpja.664
- Uebelhoer, L., Koon, W., Harley, M.D., Lawes, J.C., **Brander, R.W**. (2022). Characteristics and beach safety knowledge of beachgoers on unpatrolled surf beaches in Australia. *Natural Hazards and Earth Systems Sciences*, 22:909-926. https://doi.org/10.5194/nhess-22-909-2022
- Woods, M., Koon, W., **Brander, R.W**. (2022). Identifying risk factors for beach drowning prevention amongst an Australian multicultural community. *PLoS One*, 17(1): e0262175 . https://doi.org/10.1371/journal.pone.0262175

2021

- Koon, W., Peden, A., Lawes, J.C., **Brander, R.W.** (2021). Coastal drownings: A scoping review of burden, risk factors, and prevention strategies. PLoS One, 16(2):e0246034 https://doi.org/10.1371/journal.pone.0246034
- Lawes, J.C., Uebelhoer, L., Koon, W., Strasiotto, L., Anne, F., Daw, S., **Brander, R.W.**, Mulcahy, N., Peden, A.E. (2021). Understanding a population: a methodology for a population-based coastal safety survey. PLoS ONE, 16(8): e0256202 https://doi.org/10.1371/journal.pone.0256202
- Pitman, S.J., Thompson, K., Hart, D.E., Moran, K., Gallop, S.L., **Brander, R.W.**, Wooler, A. (2021). Beachgoers' ability to identify rip currents at a beach in situ. *Natural Hazards and Earth Systems Sciences*, 21:115-128. https://doi.org/10.5194/nhess-21-115-2021
- Szpilman, D., Palacios Aguilar, J., Querioga, A.C.,...**Brander, R.W**., et al. (2021). Drowning and aquatic injuries dictionary. *Resuscitation Plus*, 5 https://doi.org/10.1016/j.resplu.2020.100072

2020

- **Brander, R.W.** (2020). 'Do you want the good news or the bad news?' Measuring rip currents at Muriwai Beach, New Zealand. *Journal of Coastal Research*, SI 101:269-275. https://doi.org/10.2112/JCR-SI101-049.1
- **Brander, R.W.**, Masselink, G., Turner, I.L. (2020). 'There's camels on the beach!': The Nine-Mile Beach Central Queensland macrotidal beach experiment. *Journal of Coastal Research*, SI 101:246-251. https://doi.org/10.2112/JCR-SI101-045.1
- Bauer, B.O., Sherman, D.J., **Brander, R.W.,** Osborne, P.D., Greenwood, B. (2020). The times they are a-changin. *Journal of Coastal Research*, SI 101: 125-135. https://doi.org/10.2112/JCR-SI101-025.1
- Castelle, B., Scott, T., **Brander, R.W.**, McCarroll, R.J., Tellier, E., de Korte, E., Tackuy, L., Robinet, A., Simonnet, B., Salmi, L-R. (2020). Wave and tide controls on rip current activity and drowning incidents in southwest France. Journal of Coastal Research, SI 95:769-774. https://doi.org/10.2112/SI95-150.1
- Koon, W., Schmidt, A., Queriroga, A.C., Sempsrott, J., Szpilman, D., Webber, J., **Brander, R.W**. (2020). The need for consistent beach lifeguard data collection: results from an international survey. *Injury Prevention*, 27(4) https://dx.doi.org/10.1136/injuryprev-2020-043793
- Lawes, J.C., Rijksen, E.J.T., Brander, R.W., Franklin, R.W., Daw, S. (2020). Dying to help: fatal bystander rescues in Australian coastal environments. *PLoS One*, 15(9): e0238317 https://doi.org/10.1371/journal.pone.0238317

2019

- **Brander, R.W.**, Warton, N., Franklin, R.C., Shaw, W.S., Rijksen, E.J.T., Daw, S. (2019). Characteristics of aquatic rescues undertaken by bystanders in Australia. *PLOS One*, 14(2): e0212359. https://doi.org/10.1371/journal.pone.0212349
- Brewster, B.C., Gould, R.E., **Brander, R.W.** (2019). Estimations of rip current rescues and drowning in the United States. *Natural Hazards and Earth System Sciences*, 19(2):389-397. https://doi.org/10.5194/nhess-19-389-2019
- Castelle, B., Scott, T., **Brander, R.W.**, McCarroll, J., Robinet, A., Tellier, E., de Korte, E., Simonnet, B., Salmi, L-R. (2019). Environmental controls on surf zone injuries on high-energy beaches. Natural Hazards and Earth Systems Sciences, 19: 2183-2205. https://doi.org/10.5194/nhess-19-2183-2019
- Franklin, R.C., Peden, A., **Brander, R.W.**, Leggat, P. (2019). Who rescues who? Understanding aquatic rescues in Australia using coronial data and a survey. *Australian and New Zealand Journal of Public Health*, 43(5): 477-483 https://doi.org/10.1111/1753-6405.12900
- Pitman, S.J., Gallop, S.L., **Brander, R.W**. (2019). Staying safe on a surf beach: what are rip currents? Frontiers for Young Minds, 7:33 https://doi:10.3389/frym.2019.00033

2018

- Castelle, B., **Brander, R.W.**, Tellier, E., Simmonet, B., Scott, T., McCarroll, J., Campagne, J-M., Cavailhes, T., Lechevral, P. (2018). Surf zone hazards and injuries on beaches in SW France. *Natural Hazards*. 93(3): 1317-1335. https://doi.org/10.1007/s11069-018-3354-4
- Clifford, K., **Brander**, **R.W**., Trimble, S., Houser, C. (2018). Beach safety knowledge of visiting international study abroad students to Australia. *Tourism Management*, 69:487-497. https://doi.org/10.1016/j.tourman.2018.06.032
- McCarroll, J., **Brander, R.W.**, Castelle, B., Scott, T. (2018). Bathymetric controls on rotational surf zone currents. *Journal of Geophysical Research Earth Surface*, 123(6):1295-1316. https://doi.org/10.1029/2017[F004491
- Menard, D., Houser, C., **Brander, R.W.**, Trimble, S., Scaman, A. (2018). The psychology of beach users: importance of confirmation bias, action and intention to improving rip current safety. *Natural Hazards*, 94(2):953-973. https://doi.org/10.1007/s11069-018-3424-7

Pre-2018 (in reverse chronologic order)

- Gallop, S.L., Harley, M.D., **Brander, R.W.**, Simmons, J.A., Splinter, K.D., Turner, I.L. (2017). Assessing cross-shore and alongshore variation in beach morphology due to wave climate: storms to decades. *Oceanography*, 30(3): 120-125. https://doi.org/10.5670/oceanog.2017.304
- Houser, C., Trimble, S., **Brander, R.**, Brewster, C., Dusek, G., Jones, D., Kuhn, J. (2017). Public perceptions of a rip current hazard education program: 'Break the Grip of the Rip!' *Natural Hazards and Earth System Sciences*, 17: 1003-1024. https://doi.org/10.5194/nhess-17-1003-2017
- Warton, N.M. and **Brander, R.W.** (2017). Improving tourist beach safety awareness: the benefits of watching Bondi Rescue. *Tourism Management*, 63: 187-200. https://doi.org/10.1016/j.tourman.2017.06.017
- **Brander, R.W.** (2016). The importance of visual rip current education. *Physical Educator New Zealand*, 49(1): 17-19. ISSN: 1178-1076
- Castelle, B., Scott, T., **Brander, R.W**., McCarroll, R.J. (2016). Rip current type, circulation and hazard. *Earth Science Reviews*, 163: 1-21. https://doi.org/10.1016/j.earscirev.2016.09.008
- Castelle, B., McCarroll, R.J., **Brander, R.W**., Scott, T., Dubarbier, B. (2016). Modelling the alongshore variability of optimum rip current escape strategies on a multiple rip-channelled beach. *Natural Hazards*, 81(1): 664-686. https://doi.org/10.1007/s11069-015-2101-3
- Gallop, S., Woodward, E., **Brander, R.W.**, Pitman, S. (2016). Perceptions of rip current myths from the central south coast of England. *Ocean & Coastal Management*, 119:14-20. https://doi.org/10.1016/j.ocecoaman.2015.09.010
- Houser, C., **Brander, R.W.**, Brannstrom, C., Trimble, S., Flaherty, J. (2016). Case study of rip current knowledge amongst students participating in a study abroad program. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 28: 42-60. https://doi.org/10.36366/frontiers.v28i1.379
- McCarroll, R.J., **Brander, R.W.**, Turner, I.L. (2016). Bathymetric controls on very low frequency rip current motions. *Journal of Coastal Research*, SI 75: 418-422. https://doi.org/10.2112/SI75-084.1
- McCarroll, R.J., **Brander, R.W.**, Turner, I.L., van Leeuwen, B.R. (2016). Shoreface storm morphodynamics and mega-rip evolution at an embayed beach, Bondi Beach, NSW, Australia. *Continental Shelf Research*, 116:74-88. https://doi.org/10.1016/j.csr.2016.01.013
- Miller, I., Forster, B., Laffan, S., **Brander, R.W**. (2016). Bi-directional reflectance of coral growth forms. International Journal of Remote Sensing, 37(7): 1553-1567 https://doi.org/10.1080/01431161.2016.1154220
- Van Leeuwen, McCarroll, J. R., **Brander, R.W.**, Turner, I.L., Power, H., Bradstreet, A. (2016). Examining rip current escape strategies in non-traditional beach morphologies. *Natural Hazards*, 81(1):145-165. https://doi.org/10.1007/s11069-015-2072-4
- Attard, A., **Brander, R.W.**, Shaw, W.S. (2015). Surfers as bystander rescuers on Australian beaches. *Accident Analysis and Prevention*, 82:70-78. https://doi.org/10.1016/j.aap.2015.05.017
- Drozdzewski, D., Roberts, A., Dominey-Howes, D., **Brander, RW**. (2015). The experiences of weak and non-swimmers caught in rip currents at Australian beaches. *Australian Geographer*, 46(1):15-32. https://doi.org/10.1080/00049182.2014.953735
- MacKellar, K.M., **Brander**, **R.W.**, Shaw, W.S. (2015). YouTube videos and the rip current hazard: swimming in a sea of (mis)information. *International Journal of Aquatic Research and Education*, 9: 348-363. https://doi.org/10.25035/ijare.09.03.10

- McCarroll, R.J., Castelle, B., **Brander, R.W.**, Scott, T. (2015). Modelling rip current flow and bather escape strategies across a transverse bar and rip channel morphology. *Geomorphology*, 246:502-518. https://doi.org/10.1016/j.geomorph.2015.06.041
- Bradstreet, A., **Brander, R.W.,** McCarroll, J., Brighton, B., Dominey-Howes, D., Drozdzewski, D., Sherker, S., Turner, I., Roberts, A., MacMahan, J. (2014). Rip current survival principles: towards consistency. *Journal of Coastal Research*, SI 72: 85-92. https://doi.org/10.2112/SI72-016.1
- **Brander, R.W.**, Drozdzewski, D., D. Dominey-Howes (2014). "Dye in the Water": exploring a visual method of communicating the rip current hazard. *Science Communication*, 36(6): 802-810. https://doi.org/10.1177/1075547014543026
- McCarroll, R.J, **Brander, R.W.**, Turner, I.L., Power, H.E., Mortlock, T.R. (2014). Lagrangian observations of circulation on an embayed beach with headland rip currents. *Marine Geology*, 355, 173-188. https://doi.org/10.1016/j.margeo.2014.05.020
- McCarroll, R.J., **Brander, R.W.,** MacMahan, J.H., Turner, I.L., Reniers, A.J.H.M, Brown, J., Bradstreet, A., Sherker, S. (2014). Evaluation of swimmer-based rip current escape strategies. *Natural Hazards*, 71:1821-1846. https://doi.org/10.1007/s11069-013-0979-1
- McKay, C., **Brander, R.W.**, Goff, J. (2014). Putting tourists in harms way coastal tourist parks and hazardous unpatrolled beaches in New South Wales, Australia. *Tourism Management*, 45:71-84. https://doi.org/10.1016/j.tourman.2014.03.007
- Shaw WS, Goff J, **Brander R.W.**, Walton T, Roberts A., Sherker S. (2014). Surviving the surf zone: towards more integrated rip current geographies. *Applied Geography*, 54:54-62. https://doi.org/10.1016/j.apgeog.2014.07.010
- Hammerton, C.E., **Brander, R.W**., Dawe, N., Riddington, C., Engel, R. (2013). Approaches for beach safety and education in Ghana: a case study for developing countries with a surf coast. *International Journal of Aquatic Research and Education*. 7:254-265. https://doi.org/10.25035/ijare.07.03.08
- **Brander, R.W.,** Dominey-Howes, D., Champion, C., Del Vecchio, O., Brighton, B. (2013). A new perspective on the Australian rip current hazard. *Natural Hazards and Earth System Sciences*, 13:1687-1690. https://doi.org/10.5194/nhess-13-1687-2013
- **Brander, R.W.** (2013). Can a synthesis of geography save lives in the surf? *Australian Geographer*. 44(2): 123-127. https://doi.org/10.1080/00049182.2013.799053
- Brighton, B., Sherker, S., **Brander, R.W.**, Thompson, M., Bradstreet, A. (2013). Rip current related drowning deaths and rescues in Australia 2004-2011. *Natural Hazards and Earth System Sciences*, 13: 1069-1075. https://doi.org/10.5194/nhess-13-1069-2013
- McCarroll, R. J., **Brander**, R.W., MacMahan, J.H., Turner, I.L., Reniers, A.J.H.M., Brown, J.A., Bradstreet, A. (2013). Assessing the effectiveness of rip current swimmer strategies, Shelly Beach, NSW, Australia. *Journal of Coastal Research*, SI 65: 784-789. https://doi.org/10.2112/SI65-133.1
- Drozdzewski, D., Shaw, W., Dominey-Howes, D., **Brander, R.**, Walton, T., Gero, A., Sherker, S., Goff, J. and Edwick, B. (2012). Surveying rip current survivors: preliminary insights into the experiences of being caught in rip currents. *Natural Hazards and Earth System Sciences*, 12: 1201-1211. https://doi.org/10.5194/nhess-12-1201-2012
- Williamson, A., Hatfield, J., Sherker, S., **Brander R.W.** and Hayen A. (2012). A comparison of attitudes and knowledge of beach safety for Australian beachgoers, rural residents and international tourists. *Australian and New Zealand Journal of Public Health*, 36(4):385-391. https://doi.org/10.1111/j.1753-6405.2012.00888.x
 - Hatfield, J., Williamson, A., Sherker, S., **Brander, R.W**, and Hayen, A. (2012). Development and evaluation of an intervention to reduce rip current related beach drowning. *Accident Analysis and Prevention*, 46:45-51. https://doi.org/10.1016/j.aap.2011.10.003
- **Brander, R.W.,** Bradstreet, A., Sherker, S., MacMahan, J. (2011). Responses of swimmers caught in rip currents: perspectives on mitigating the global rip current hazard. *International Journal of Aquatic Research and Education*, 5:476-482. https://doi.org/10.25035/ijare.05.04.11
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- McCarroll, R. and **Brander**, R.W **2013**. Spatial variability in circulation and cross-shore exchange across multiple rip channels on an embayed beach. In: Turner, I.L. and Couriel, E.D., (Eds.). *Proceedings of Coasts & Ports 2013 Conference: 21st Australasian Coastal and Ocean Engineering Conference and the 14th Australasian Port and Harbour Conference*, National Committee for Coastal and Ocean Engineering, Engineers Australia, PIANC and IPENZ, Sydney, Australia, 6 p.
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- **Brander, R.W.**, Short, A.D., Osborne, P.D., Hughes, M. and Mitchell, D.M. (1999). Field measurements of a large-scale rip current system. Proceedings of Coastal Sediments '99. American Society of Civil Engineers, New York, 562–575.
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- **Brander, R.W.** and Greenwood, B. (1993). Bedform roughness and suspended sediment transport in the surf zone. *Proceedings of the 11th Australasian Conference on Coastal and Ocean Engineering,* Townsville, QLD, 241–246.
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- **Brander, R.W.**, Shaw, W.S., and Attard, A. (2015). Surfers as bystander rescuers in Australia. World Conference on Drowning Prevention 2015, Penang, Malaysia. p. 249.
- **Brander, R.**, McCarroll, R., Turner, I.L., MacMahan, J.H., and Bradstreet, A. (2013). Measurements of swimmer response in rip currents. *World Conference on Drowning Prevention 2013*, Potsdam, Germany. p. 182.
- **Brander, R.**, Dominey-Howes, D., Drozdzewski, D., Shaw, W., Roberts, A. and Sherker, S. (2013). Experiences of swimmers caught in rip currents. *World Conference on Drowning Prevention 2013*, Potsdam, Germany. p. 187.
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- McCarroll, R.J., **Brander, R.W.**, MacMahan, J., Turner, I., Reniers, A. and Brown, J., 2012. RIPSAFE Rip current swimmer and floater experiments. *2nd International Rip Current Symposium*, Collaroy, NSW, Oct 30-Nov 1, 2012.
- Bradstreet, A., **Brander, R.W.**, Sherker, S. and MacMahan, J., 2012. Responses of swimmers caught in rip currents: perspectives on mitigating the global rip current hazard. 2nd International Rip Current Symposium, Collaroy, NSW, Oct 30-Nov 1, 2012.
- Hatfield, J., Williamson, A., **Brander, R.W.**, Sherker, S., Hayen, A., 2012. Development and evaluation of campaigns to reduce rip current related rip current beach drowning. *2nd International Rip Current Symposium*, Collaroy, NSW, Oct 30-Nov 1, 2012.
- Drozdzewski, D., **Brander, R.W.**, Dominey-Howes, D., Shaw, W., Goff, J., Moraza, M., Sherker S., 2012. Surveying rip current survivors preliminary insights into experiences of being caught in rip currents. *2nd International Rip Current Symposium*, Collaroy, NSW, Oct 30-Nov 1, 2012.
- **Brander, R.W.**, Williamson, A., Hatfield, J., Sherker, S., 2012. Community presentations on rip currents content, challenges and the Science of the Surf case study. *2nd International Rip Current Symposium*, Collaroy, NSW, Oct 30-Nov 1, 2012.
- Williamson, A., Hatfield, J., Sherker, S., **Brander, R.W.**, Hayen, A., Dunn, N., 2012. Understanding how to address rip current safety for international tourists. *2nd International Rip Current Symposium*, Collaroy, NSW, Oct 30-Nov 1, 2012.
- **Brander, R.**, Hatfield, J., Sherker, S., Williamson, A. and Hayen, A. (2011). An evaluation of a community knowledge-based intervention on beach safety: The Science of the Surf (SOS) presentations. *World Conference on Drowning Prevention 2011*, Danang, Vietnam. p. 166.
- Brander, R., Turner, I., Jones, B., Jones, W., Brown, J., MacMahan, J., Sherker, S. and Thompson, M. (2011). Measurements of rip current flow and swimmer behaviour in Australian rip current systems using low-cost GPS: implications for beach safety. *World Conference on Drowning Prevention 2011*, Danang, Vietnam. p. 169.
- Sherker, S., Thompson, M., Agnew, P., Farmer, N., Bradstreet, A., **Brander, R.** and Drozdzewski, D. (2011). Swim or float? An evidence-based approach to reducing the risk of rip related drowning in Australia. *World Conference on Drowning Prevention 2011*, Danang, Vietnam. p. 167.
- Drozdzewski, D., Shaw, W., **Brander, R.**, Goff, J., Dominey-Howes, D., Sherker, S. and Walton, T. (2011). Reducing rip current drowning: lessons from interviews with rip current survivors. *World Conference on Drowning Prevention 2011*, Danang, Vietnam. p. 166.
- Williamson, A., Hatfield, J., Sherker, S.. **Brander, R.W.** and Hayen, A. (2011). Why were you swimming there? Analysis of risky swimming behaviour on Australian beaches. *World Conference on Drowning Prevention 2011*, Danang, Vietnam. p. 165.
- Hatfield, J., Williamson, A., Sherker, S. and **Brander, R.W.** (2011). Improving beach safety: the Science of the Surf (SOS) research project. *World Conference on Drowning Prevention 2011*, Danang, Vietnam. p. 164.

- **Brander, R.W.** (2010). Challenges, limitations and new approaches for reducing rip current drownings in Australia. *Australian Water Safety Conference*, Sydney, NSW, May 2010.
- **Brander, R.W.** (2010). Keynote Address: Don't get sucked in by the rip; challenges for rip current research and outreach. *1st International Rip Current Symposium*, Miami, Florida, Feb 17-19, 2010.
- Williamson A, Hatfield J, Sherker S, **Brander R**, Hayen A. (2010). Improving beach safety: The Science of the Surf research project Stages 1 & 3: Collection of baseline data to inform a tailored intervention and Evaluation of the effectiveness of the "Don't get sucked in by the rip" campaign. *1st International Rip Current Symposium*, Miami, February, 2010.
- Williamson A, Hatfield J, Sherker S, **Brander R**, Hayen A. (2009). Improving beach safety: The Science of the Surf research project Stage 1: Collection of baseline data to inform a tailored intervention. *Be Active '09* (2009 Australian Conference of Science and Medicine in Sport, 7th National Physical Activity Conference and 6th National Sports Injury Prevention Conference), Brisbane, October 2009.
- Hatfield J, Williamson A, Sherker S. **Brander R**, Hayen, A. (2009). Improving beach safety: The Science of the Surf research project Stage 2: Development and process evaluation of the "Don't get sucked in by the rip" campaign. *Be Active '09* (2009 Australian Conference of Science and Medicine in Sport, 7th National Physical Activity Conference and 6th National Sports Injury Prevention Conference), Brisbane, October, 2009.
- Williamson A, Hatfield J, Sherker S, **Brander R**, Hayen A. Improving beach safety: The Science of the Surf research project Stage 3: Evaluation of the effectiveness of the "Don't get sucked in by the rip" campaign. *Be Active '09* (2009 Australian Conference of Science and Medicine in Sport, 7th National Physical Activity Conference and 6th National Sports Injury Prevention Conference), Brisbane, October, 2009.
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- Williamson, A., Hatfield, J., Sherker, S., **Brander, R.** and Hayen, A. (2009). Improving beach safety: the Science of the Surf research project. Stage 3 Evaluation of the effectiveness of the "Don't get sucked in by the rip" campaign". *Be Active 09*. Brisbane, Australia.
- **Brander, R.W.** (2009). Keynote Address: Challenges and future directions for beach safety education. *Australian Professional Ocean Lifeguard Conference*, Coffs Harbour, Australia
- Williamson, A., Hatfield, J., Sherker, S., **Brander, R.** and Whibley, B. (2008). Science of the Surf (SOS); The development and evaluation of a national educational campaign for beach safety. *Australian Water Safety Conference*, Sydney, Australia.
- **Brander, R.W.**, 1998. Sediment transport in low-energy rip current systems. 8th Meeting of the Australia-New Zealand Geomorphology Group (ANZGG), Goolwa, South Australia.
- **Brander, R.W.**, 1997. Field monitoring of low-energy rip current systems. Proceedings of the Institute of Australian Geographers and New Zealand Geographical Society Second Joint Conference. Hobart, Tasmania.
- **Brander, R.W.**, 1994. Field investigations on the dynamics of rip currents. 6th Meeting of the Australia-New Zealand Geomorphology Group (ANZGG), Hanmer Springs, N.Z.

REPORTS (n = 2)

- Cooney, N., Daw, S., Brander, R.W., Ellis, A., Lawes, J., 2020. Coastal Safety Brief: Rip Currents. Surf Life Saving Australia, Sydney, Australia, 15 p.
- Attard, A., Brander, R.W., Fitzgerald, T., 2019. MyCoast NSW: New South Wales Community Perceptions of Coastal Erosion and Inundation. UNSW Sydney, 126 p.

1.2 RESEARCH GRANT INCOME

Career total income AUS \$1,455,658

Research grants (external) = \$1,203,323

AUS**\$10,000** – December 2022. Float to Survive. Randwick City and Waverley Councils. Role – Lead Investigator.

AUS**\$20,000** – July 2022. Beach Safety Research. Surf Life Saving Australia (SLSA) Internal Research Project. Role – Lead Investigator.

USD**\$46,000** - December 2021. Improving water safety at risky Instagram hotspots via targeted information campaigns. Instagram Community Safety Grant. Role – Co-Investigator.

AUS**\$28,000** – November 2021. 'Surfers Rescue 24/7: Evaluating the social impact and benefit of a rescue training program for surfers'. UNSW Science Social Good Seed Funding and Surfing NSW.. Role – Lead Investigator

AUS**\$10,000** – August 2021. Surfers Rescue 24/7 Project. Surfing NSW Internal Research Project. Role – Lead Investigator

AUS\$32,000 – July 2021. Beach Safety Research. Surf Life Saving Australia (SLSA) Internal Research Project. Role – Lead Investigator

AUS\$23,000 – March 2021. Safeguarding the next generation: evaluating the effectiveness of beach safety interventions for teenagers. UNSW Science Industry Network Seed Fund and Lake Macquarie City Council. Role – Lead Investigator

AUS\$32,000 - July 2020. Beach Safety Research. Surf Life Saving Australia (SLSA) Internal Research Project. Role - Lead Investigator

AUS\$32,000 - July 2019. Beach Safety Research. Surf Life Saving Australia (SLSA) Internal Research Project. Role - Lead Investigator

AUS\$99,180 - March 2019. Identifying Rip Currents and Beach Usage at Unpatrolled Beach Locations. NSW Department of Justice - Office of Emergency Management/State Emergency Management Water Safety Funds. Role - Lead Investigator.

AUS\$32,000 - July 2018. Beach Safety Research. Surf Life Saving Australia (SLSA) Internal Research Project. Role - Lead Investigator

AUS\$154,448 – December 2016. Community Understanding of Coastal Erosion: Improving Resiliency and Preparedness to Coastal Storms and Sea Level Rise. NSW Department of Justice – Office of Emergency Management/State Emergency Management Projects (SEMP). Role – Lead Investigator.

AUS\$30,840 – December 2016. Improved Bystander Coastal Rescue Capability. Surf Life Saving Australia (SLSA) Internal Research Project. Role – **Lead Investigator** (with 2 others).

AUS\$42,864 - August 2013. The Rip Buoy Project. Australian Government Research in Business (RiB) Grant. Role - Lead Scientist.

AUS\$396,000 – June 2011. Rip currents: an evidence based approach to managing the greatest beach hazard. Australian Research Council, *Linkage* Program LP110200134. Role – **Lead Chief-investigator** (with six others).

AUS\$12,116 – June 2010. Measurements of rip current flow and swimmer behaviour in Australian rip current systems using low-cost GPS. Surf Life Saving Australia (SLSA) Internal Research Project. Role – Lead Investigator

AUS\$12,272 – June 2010. Demographics, surf knowledge and behavioural response to rip current rescue victims. Surf Life Saving Australia (SLSA) Internal Research Project. Role – **Co- Investigator.**

AUS\$278,593 – June 2007. The Science of the Surf: the development and evaluation of a national campaign to reduce the risk of coastal drowning. Australian Research Council, *Linkage* Program LP0774843. Role – Chief-investigator (with 3 others).

AUS\$3,000 - November 2003. Waves and currents around a coral cay. *Australian Geographic*. Role - Chief Investigator

Other programs and activities (internal) =\$169,335

AUS\$28,000 - March 2022. Surfers rescue 24/7: evaluating the social impact and benefit of a rescue training program for surfers. UNSW Science Social Good Seed Fund 2021.

AUS\$23,000 - Feb 2021. Safeguarding the next generation: evaluating the effectiveness of beach safety interventions for teenagers. UNSW Science Industry Network Seed Funding. Role - Lead Investigator

AUS**\$10,840** – Feb 2005. Impact of the 2004 Boxing Day Tsunami on the Maldives. University of New South Wales Vice-Chancellor Discretionary Funds.

AUS**\$8,600** – February 2005. Wave characteristics across a fringing reef, Lizard Island, Qld. University of New South Wales, Faculty of Science Research Grant Program

AUS**\$17,895** – November 2004. Rip current flow and sediment transport monitoring. University of New South Wales, Faculty of Science Research Grant Program

AUS**\$15,000** – November 2003. Coral reef island morphodynamics. University of New South Wales, Faculty of Science Research Grant Program

AUS**\$15,000** – March 2002. Coral reef island morphodynamics. University of New South Wales Goldstar Research Award

AUS**\$8,000** – November 2001. Rip current morphodynamics. University of New South Wales Research Support Program

AUS\$20,000 - July 2001. University of New South Wales Core Standards Start-up Program.

NZ**\$3,000 (AUS\$1,800)** – July 1999. Rip current morphodynamics. Victoria University of Wellington Summer Research Grant.

NZ**\$20,000** (**AUS\$12,500**) – July 1998. Victoria University of Wellington Internal Grant Committee Start Up Funds.

1.3 SUPERVISION OF HIGHER DEGREE RESEARCH STUDENTS

Successful student completions

2021 Anna Attard (MSc) - Community understanding of coastal erosion

2015 Ben Van Leeuwen (MSc) - Rip current escape strategies

2014 Jak McCarroll (PhD) - Morphodynamics of embayed beaches

2014 Todd Walton (PhD) - Australian surf culture and hazards.

2001 Richard Jennings (PhD) - Morphodynamics of gravel beaches

1999 Matthew Paterson (MSc) -Sediment sorting on gravel beaches

1999 Samuel Barrow (MSc) - A wave climate for Titahi Bay, NZ

Current students

William Koon (PhD) - Coastal drowning and safety interventions in Australia

Nick Mulcahy (PhD) - Drowning and rescue relationships with beach type

Sam Cornell (PhD) - Interventions for Instagram related selfie-related drowning

1.4 SUPERVISION OF 4TH YEAR HONOURS RESEARCH STUDENTS

2021 Alva Lane (BSc Hons 1st Class) - Surf Zone Injuries in New South Wales Australia

2021 Mark Woods (BSc Hons 1st Class) - Beach Safety Knowledge of Multicultural Communities

2017 Kirsten Clifford (BSc Hons 1st Class) - Beach Safety Knowledge of International Students

2017 Scarlet Davis (BSc Hons 1st Class) - Community Perceptions of the Shark Hazard

2016 Nicola Warton (BSc Hons 1st Class) - Educational Impacts of 'Bondi Rescue'

2014 Ben Aggar (BSc Hons 1st Class) - The Rip Buoy Project

2014 Anna Attard (BSc Hons 1st Class) - Surfers as bystander rescuers

2014 Felicity Bain (BSc Hons 1st Class) - Video imaging of Bondi Beach

2013 Campbell McKay (BSc Hons 1st Class) - Beach drowning in Ghana

2012 Ben van Leeuwen (BSc Hons 1st Class) - Measurements of topographic rip currents.

2012 Lara Edwards (CivEng Hons) – Remote video imagery analysis of the morphologic behaviour of topographic rip currents.

2011 Erica Davey (CivEng Hons) - A global analysis of rip current spacing.

2010 Ben Jones (CivEng HOns) - Lagrangian measurements of rip current flow at Bondi Beach, NSW.

2010 Warren Jones (Honours-CivEng) – A physical analysis of swimmer escape strategy in rip currents

2009 Will Broadfoot (BSc Honours) - An analysis of lifeguard rescues at Bondi Beach, NSW.

2005 Cameron Weller (BSc Honours) - Morphodynamics of low energy beaches in Jervis Bay, NSW.

2005 Celia Cameron-Smith (BSc Honours) – Assessment of beach erosion at Narrabeen Beach, NSW using video imagery.

2005 Michael Daly (BSc Hons 1st Class) - Wave characteristics across fringing reefs.

2004 Elpiniki Joseph (BSc Hons) - Rip current morpodynamics at Bennetts Beach, NSW.

2004 Tim Jamieson (Hons 1^{st} Class) –Long term assessment of beach erosion at Wamberal Beach, NSW.

- 2003 Chris Bourne (BScHons) Bioclastic sediment characteristics of coral cay islands.
- 2003 Nicole White (BSc Hons 1st Class) Beach profiles of coral sand and shingle cay islands.
- **2003 Kurt Plambeck (BSc Hons)** Temporal behaviour of a high-energy embayed beach, Tamarama, NSW.
- **2003 Sherlin Ng (BSc Hons)** Shoreline dynamics on a coral shingle cay.
- **2002 Ashley Robinson (BSc Hons 1**st **Class)** Morphological change on a coral shingle cay, Lady Elliot Island, Great Barrier Reef, Australia
- **2002 Bronwyn Rutherford (BSc Hons 1**st **Class)** Blowout dune formation and morphology at Hawks Nest, NSW.
- **2001 Stephanie Ballango (BSc Hons)** Wave setup as a forcing mechanism of rip current flow.
- 2001 Raymond Low (BSc Hons) Impact of sand mining on vegetation, Tomago, NSW.
- 2001 Andrew Murrell (BSc Hons) Impact of storm drain at Tamarama Beach, NSW

External PhD Examinations

- **2019 Peter Kamstra.** PhD School of Geography, University of Melbourne *Risk perceptions and behaviour of rock fishers.*
- **2016 Edward Beetham**, Doctor of Philosophy in Geography, School of Environment, The University of Auckland *Field and numerical investigations of wave transformation and inundation on atoll islands*.
- **2014 Thomas Murray**, PhD Griffiths University, School of Environment, QLD, Australia *Morphodynamics of transient rip currents, Gold Coast, QLD Australia*
- **2012 Hiroki Ogawa**, Doctor of Philosophy in Geography, School of Environment,
 University of Auckland, New Zealand Wave Characteristics and Transformations on Sub-Horizontal (Type B) Shore Platforms on the East Coast of the North Island, New Zealand.
- **2009 Timothy Scott**, PhD School of Geography, University of Plymouth, United Kingdom *Rip Currents on Macrotidal Beaches, South-East United Kingdom.*

I have also examined approximately 15 MSc theses internally and externally since 1998.

1.4 ACADEMIC AWARDS AND SCHOLARSHIPS

- 2012 Australian Government Eureka Prize for Promoting Understanding of Australian Scientific Research
- 2012 'Best Conference Presentation Award' at the 2012 Australian Water Safety Conference for a presentation entitled "The RipSafe Project a holistic approach to understanding the rip current hazard"
- 2010 NSW Government/AusSwim Water Safety Award for Research Project of the Year
- 2009 NSW Sports Safety Gold Award for Outstanding Achievement in Applied Research in Sports Medicine by a Research Team
- **1997** Award for 'Outstanding Student Conference Presentation'. Institute of Australian Geographers (IAG) Conference, Hobart, Tasmania.

- 1993–96 Overseas Post Graduate Research Scholarship; University of Sydney
- 1993-96 University Post Graduate Research Award; University of Sydney
- 1990-91 Post Graduate Scholarship, Natural Sciences and Engineering Research Council, Canada.
- 1989-90 Ontario Graduate Scholarship
- 1989 Undergraduate Research Scholarship, Natural Sciences and Engineering Research Council, Canada
- 1989 University of Toronto Ali Tayyab Geography Award
- 1989 Dean's List, Scarborough College, University of Toronto
- 1988 Undergraduate Research Scholarship, Natural Sciences and Engineering Research Council, Canada

PART TWO - TEACHING EXPERIENCE

2.1 Learning and Teaching Awards and Grants

- **2015** UNSW Strategic Educational Development Grant (SEF#2) for 'The UNSW Field Companion A Virtual 'App' for Stage 1-2 Science Students' (\$99,880)
- **2015** UNSW Learning and Teaching Innovation Grant (SEF#2) 'The 24/7 Lab: Immersing First Year Environmental Science Students in their own Personal Learning Environment' (\$20,000)
- 2011 University of New South Wales Faculty of Science Award for Excellence in Teaching

2.2 Teaching Experience & Responsibilities

I have always carried a high teaching load at each academic institution I have taught at and have consistently received some of the highest student teaching and course evaluations at those institutions. Examples of student feedback and evaluation are available on request.

Courses taught:

UNSW Sydney (2000 - present)

GEOS 1701 Environmental Systems, Processes and Issues (Convenor)

ENVS 1011 Environmental Science

SCIF 1021 Advanced Science Seminar

GEOS 2721 Australian Surface Environments and Landforms

MSCI 2001 Introductory Marine Science

GEOS 3731 Coastal Processes and Hazards (Convenor)

GEOS 3921 Coastal Resource Management MSCI 0501The Marine Environment SCIF 2041 Research Internship (Supervisor)

BEES 0006 Special Topics (Supervisor)

Victoria University of Wellington (1998 - 2000)

GEOG114 Environments and Resources: The Foundations (Convenor)

GEOG213 Physical Environmental Processes

GEOG319 Atmospheric and Coastal Systems (Convenor)

GEOG323 Advanced Physical Environmental Processes

PHYG401 Geomorphology and its Application

PHYG403 Special Topic (Convenor)

PHYG413 Coastal Processes and Management (Convenor)

University of Sydney (1994 - 1998)

IMS2 Introductory Marine Science GEOGIIP Mega Geomorphology GEOGIIIP Coastal Depositional Environments

University of Toronto (1989 - 1991)

GGRB19Y General Geomorphology GGRB24Y Hydrology, Land Use and Water Quality GGRC28Y The Hydrology of Surface and Subsurface Waters

2.4 CURRICULUM DEVELOPMENT AND TEACHING INNOVATION

Curriculum development at University of New South Wales (2000 - present)

 I have revamped several courses offered with the BSc major in Physical Geography at UNSW and developed one new 3rd year course in the School of BEES, UNSW.

GEOS1701 – Environmental Systems, Processes and Issues. I revamped and modified this course upon my arrival at UNSW in 2000 in my role as Course Co-ordinator. Since my arrival, the course evaluations have increased dramatically and it has always been one of the most successful courses offered in the School of BEES. The course was subsequently modernised and updated with a new title, new core themes, new laboratory exercises, and a new field trip in 2016.

GEOS3731 – Coastal Geomorphology. I developed this new advanced level, field based course in coastal processes and landforms as an entry level course for Honours and PhD students. The course was first offered in July 2011.

Curriculum development at Victoria University of Wellington (1998 - 2000)

 I completely revamped an existing course GEOG114 Environments and Resources including all lectures, labs, assignments and a field trip and turned it into one of the most successful undergraduate courses in the School of Earth Sciences, VUW.

• I developed, introduced and co-ordinated a new 3rd year undergraduate course GEOG314 Atmospheric and Coastal Systems.

PART THREE – SERVICE, ADMINISTRATION, MANAGEMENT & OUTREACH

3.1 Service to UNSW Sydney

- 2017 2021 Deputy Head of School, School of BEES
- 2015 2017 Postgraduate Co-ordinator (Candidature) School of BEES
- 2008 2014 Co-ordinator of the School of BEES Seminar Series
- 2008 present School of BEES Undergraduate Teaching Committee
- UNSW TV YouTube videos with over 2 million views combined
- UNSW Faculty of Science 'Rip Current Survival Guide' posters and DVDs

I have given numerous university and faculty 'promotional' lectures on behalf of UNSW to staff, international students, high school students and members of the community.

3.2 Service to Society

On January 26, 2023 I was appointed as Member of the Order of Australia (AM) for significant service to coastal science, and to the community, through beach safety research and education.

'Science of the Surf (SOS)' Community Education Program

In 2001 I initiated a program called 'The Science of the Surf (SOS)' by giving free community presentations to members of the public at coastal locations in Sydney's Eastern Suburbs. Since then, the program has expanded into primary and high schools, surf life saving clubs, community and corporate groups. The aim of the program is to educate people about beach and surf hazards through an understanding of the basic science of beaches, waves and rip currents. To date, I have given hundreds of talks to over 50,000 people.

The program has garnered numerous community safety awards and media attention and has since expanded into various forms of social media including a dedicated website www.scienceofthesurf.com and numerous YouTube videos including 'How to Survive Beach Rip Currents' which has over 1.4 million views and has won National Australian Government Safer Community Awards.

The program also has freely available material including rip current survival guide posters and dvds.

National Geographic 'Rip Current Heroes' Documentary

Produced by National Geographic and Markland Media and premiering on the National Geographic Channel during the 2017/2018 summer season, this 50 minute documentary provides a clear, comprehensive and engaging overview of the rip current hazard. The program follows my research and community education efforts as one of its' central themes. It has been shown on Qantas and Jetstar inflight video channels since March 2018.

Rip Currents - National (Australia) Study Guide for Teachers

In collaboration with Atom Media, Markland Media, I helped design and create a study guide for teachers on the rip current hazard that is closely linked with the National Geographic documentary 'Rip Current Heroes'. This not-for-profit guide is designed for Years 7-10 and is freely available to all teachers around Australia.

United States Public Broadcasting System (PBS) 'Rip Current Rescue' Documentary

Produced by Markland Media in collaboration with NOAA, the NWS and the USLA, this full length 50 minute documentary follows my research in relation to rip current drownings across the United States and is shown on the US television network PBS. An accompanying study guide available to all was developed by Markland Media and myself for the USLA.

Affiliations and Memberships

- Member of the International Lifesaving Federation (ILS) Rip Current Alliance (RipSafe)
 Committee
- Member of the Surf Life Saving Australia Research Advisory Working Group
- Member of the Australian Coastal Society
- Member of the NSW CALD Water Safety Group
- Member of the Coastal Education Research Foundation (CERF)
- Individual and Organisation (Science of the Surf) membership with the Australian Professional Ocean Lifeguard Association (APOLA)
- Individual Membership with Surf Educators International (SEI)
- Member of Tamarama Beach Surf Life Saving Club since 1993; Life Member since 2016

3.3 Social and Multi Media

I have successfully used social media and multi-media tools to communicate the science of rip currents, an understanding of coastal processes and landforms, and an understanding and awareness of beach hazards to the general public, primary and high school students. This has been achieved through a number of methods, primarily via my Science of the Surf program.

Still Images

- contributed 75 images to the CD-ROM compilation: Slattery, M. (2000). GEOMORPHOLOGY; A Collection of Images
- contributed 1 image of the 12 Apostles on Victoria's Great Ocean Road to the National Geographic Family Reference Atlas of the World (2002; 2006). This has been translated and distributed across the world
- Images contributed to various textbooks and educational books

YouTube Videos (> 3,500,000 views)

- 'How to Survive Beach Rip Currents'; 1,600,000 views as of Feb 2023 (UNSW TV)*
- 'Where Do Waves Come From?'; 125,000 views as of Feb 2023 (UNSW TV)
- 'How do Waves Break?' 82, 000 views as of Feb 2023 (UNSW TV)
- 'Beach Survival Guide'; 93,000 views as of Feb 2023 (UNSW TV)
- 'Rip Current Time Lapse' 420,000 views as of Feb 2023
- 'How Do Tides Work? 119,000 views as of Feb 2023 (UNSW TV)
- 'Channel 7 News Rip Currents 239,000 views of 2023
- 'Something everybody should know about Rip Currents!' 194,000 views as of Feb 2023
 - + many other related videos with total views as of Feb 2023 > 500,000
 - *This video also has subtitled YouTube versions in Chinese, Spanish, Portuguese, French, Thai

Websites and Social Media

I run the very successful community education website <u>www.scienceofthesurf.com</u> which is a portal for educational material on (primarily) the rip current hazard

My Facebook page 'Dr Rip's Science of the Surf' has over 5500 'followers' as of Feb 2023 and is updated regularly with information pertaining to coastal science and beach safety. I have a Twitter account (@Dr_Rip_SOS), but I don't use it often. Not a fan.

3.4 Community Based Awards

- 2012 Australian Government Eureka Prize for Promoting Understanding of Australian Scientific Research
- 2011 NSW Water Safety Awards High Commendation Community Education Program of the Year
- 2009 Australian Government Attorney General Safer Communities Award for 'Don't Get Sucked in by the Rip' in the Research Bodies Category
- 2009 Australian Government Attorney General Safer Communities Award for 'Don't Get Sucked in by the Rip' in the Education, Training and Research Category
- 2009 NSW Sports and Recreation Safety Award for Science of the Surf
- 2007 NSW Department of Education and Training (DET) Frater Award for Excellence in School Performances
- 2005 NSW Sport and Recreation AustSwim "Water Safety Event of the Year" for Science of the Surf
- 2005 Tamarama SLSC Senior Clubman of the Year Award
- 2003 Australian Government Attorney-General Emergency Management Australia Award for 'Science of the Surf in the Pre-Disaster Category
- 2002 Tamarama SLSC Senior Clubman of the Year Award
- 2002 Sydney Branch NSW Surf Life Saving Community Event of the Year
- 2002 NSW Surf Life Saving Award of Excellence (Community Education)

3.5 Media Communication, Expertise and Profile

I have a significant media profile in Australia with over 300 radio, newsprint and television appearances across all networks on the rip current hazard and surf science. I provide regular commentary on rip currents, beach safety, and coastal matters for radio, tv and print media and work with journalists to bring science stories to the public.

My significant media profile in Australia is evident by my popular nickname '*Dr Rip*'. While I have lost track of my total number of appearances (*n*) for each category, I have included an accurate estimate and have provided some of the more notable examples of my media exposure below:

****PLEASE NOTE THAT DUE TO VOLUME, I HAVE NOT UPDATED THIS LIST SINCE 2013****

Print (n = 50 + since 2000)

I have been quoted and profiled on many stories involving rip currents in both major city, regional and local newspapers. Often articles are syndicated around the country. Some of my recent more prominent, self authored op eds, and longer articles are:

- Australian Magazine (insert with Weekend Australian newspaper) 10 questions profile 26/1/2013
- Illawarra Mercury (15/9/12 Weekend Ed.) 'A safety tip from Dr Rip' (cover photo and story)
- Etihad Airlines Inflight Magazine (Dec 2011 issue) 'The Surf Doctor' (full page profile)
- Newcastle Herald (24/1/12) Op Ed: 'Look to rips for real 'jaws of death'
- Sydney Morning Herald (24/11/11) 'Rip theories put to the test' (full page article in Environment/Science section about my ARC research)
- Sydney Morning Herald (3/2/10) Op Ed: 'Yes, we can slash the death toll from rips at our beaches'
- Sydney Morning Herald (20/12/2008) 'Minutes later this man was dead' (front page article with photo of Saturday edition)

Radio (n = 150 + since 2000)

Most (but not all) of my radio appearances involve discussing rip currents, usually following a drowning and last from 5-10 minutes. The following are longer appearances (30 minutes to 1 hour):

- ABC 702 Sydney (since 2010) regular 'Sons of Beaches' segment on Weekends with Simon Marnie
- ABC National Breakfast with Fran Kelly (10/02/10) Live panel rip current debate
- ABC Classic FM (29/3/10 and 29/10/10) Morning Interview with Margaret Throsby
- ABC Triple J FM (5/2/09) Science on mornings with 'Dr Karl'

Television (n = 25 + since 2000)

- Foxtel Coast Australia (30/12/2013) Gold to Sunshine Coast Ep 5 Rip current segment
- WIN News (3/1/13) Extended story on rip currents and Illawarra SOS talks
- Bondi Rescue 2012 Segment on rip currents
- ABC Catalyst (5/4/12) 'Rip Survivor'
- Channel 10 The Project (24/1/12) Live interview discussing rip currents
- Channel 7 Sunrise (24/1/12) Studio interview discussing rip currents
- Channel 7 Today Tonight (10/1/12) 'Surviving rips this summer'
- Channel 9 Today Show (21/11/12) Studio interview discussing rips

- Channel 9 60 Minutes (7/10/10) 'The Cruel Sea'
- ABC Sleek Geeks (7/2/08)
- Channel 9 A Current Affair (24/1/05)
- ABC 7:30 Report (24/3/04) 'Science could prove life saving in surf'
- ABC Catalyst (26/2/02) 'Science of Surf'
- Channel 10 Totally Wild (15/8/94 and 24/4/02)

3.6 Service to my Discipline

Journal Reviewing

I am a regular reviewer for a wide range of high ranking/profile international journals including:

Australian Geographical Studies, Coastal Engineering, Continental Shelf Research, Earth Surface Processes and Landforms, Geomorphology, Global and Planetary Change, International Journal of Aquatic Research and Education, International Journal of Injury Control and Safety Promotion, Journal of Coastal Research, Journal of Geophysical Research, Marine Geology, Nature Geoscience, Natural Hazards, New Zealand Geographer, Oceanological Studies, Zeitschrift für Geomorphologie.

International Research Council Grant Application Reviewer

I have been invited to review research grant applications for:

- Australian Research Council (ARC)
- Natural and Environmental Research Council (NERC UK)
- National Science Foundation (NSF USA)
- North Carolina SeaGrant

Conference/Workshop Organisation & Conference Session Chair/Convenor

- Abstract Reviewer and Field Trip Leader for the International Coastal Symposium, Sydney, Australia Mar 6-10, 2016
- Organising Committee 2nd International Rip Current Symposium, Sydney, Australia, Oct 30- Nov 1, 2012
- Organiser and Convenor of 1st Australian Beach Safety Education Workshop, Coffs Harbour, May 14, 2009

Conference and Workshop Keynote Speaker Invitations

- 2017 South Australia Coastal Conference, Adelaide, SA
- 2017 Costa Rica Rip Current Workshop, Jaco Beach, Costa Rica
- 2016 1st Asian Water Safety Symposium, Incheon, Korea
- 2015 University of Otago New Zealand Water Safety Symposium
- 2014 2nd International Rip Current System, Busan, Korea
- 2013 Surf Life Saving Queensland 2013 Conference, Surfers Paradise, QLD '
- 2013 Institute of Australian Geographers Conference, Perth, WA '
- 2010 1st International Rip Current Symposium, Miami, FL, USA '

3.7 Consulting and Expert Witness Experience

2020	Gosford City Police Report on Terrigal Beach Fatality
2020	Waverley Council Report on Bondi Beach Grading
2019	Expert Witness Report on William Murray vs Parks Victoria
2017	NSW Police Homicide. Report on Marks Park July 1989 Missing Person Case
2016	Shelly Beach Ocean Pool project – Ballina, NSW
2014	Expert Witness Report on Phuket rip current drowning
2006	Senior Coastal Geomorphologist for GHD Pty Ltd, Newcastle
2005	Expert Witness Report on Giles Baths, Coogee for Novak Vujanic vs Randwick City Council
2005	Expert Witness Report on Wanda Beach for Christopher Dryden vs Sutherland Shire Council
	2005 Assessment of the Coco Palm Resort Island Erosion Problem, Maldives
2004	Pacific Coast Partners for A Geomorphological Assessment of Whale Beach 2003 Expert Witness for NSW Coroners Court
	2002 NSW Police Homicide. Report on Marks Park July 1989 Missing Person Case
1999	Marlborough District Council (MDC), New Zealand. Preparation of: Natural Hazards of the
	Marlborough Region, 55 p.
1996	Waverley Council, Waverley, NSW, Australia. Preparation of: Report on Site of Tamarama Beach
	Inspectors' Temporary Observation Building. 3 p.
1990	BEAK Environmental Consultants, Toronto, Canada. Sampling of battery acid
	Contamination in an urban environment.