

Prof Juliet Hermes juliet@saeon.ac.za

SACNASP # 400076/07, NRF C1 rating

Education

2001-2005; Ph.D. Oceanography, University of Cape Town: Ocean model diagnosis of variability in the South Indian Ocean.

1999-2000; M.Sc. Physical oceanography, University of Wales, Bangor, U.K and IFREMER, Brest, France.

1994-1998; B.Sc. (Hons) Biology and European studies (French), University of Sussex, U.K. and the University of Grenoble, France.

Work experience

2007-current: Manager and principle oceanographer, Egagasini, South African Environmental Observation Network (SAEON) node for marine offshore systems. Responsibilities include developing and maintaining the business and science plans and strategy, observation and modeling programs and carrying out research, writing project and funding proposals, supervising students and interns, stakeholder relations, driving transformation in marine science, providing leadership (both scientific and business), managing budget, managing data, networking, sitting on various national and international advisory boards, education outreach, capacity building, maintaining finances, reporting to the SA National Research Foundation and the Department of Science and Technology, as well as researching climate variability using long term observations and models.

Major recent projects: The Agulhas System Climate Array long term observations
Sustainable Ocean modeling In southern Africa (co-PI)
UCT advancing black womxn
Ocean Best Practices working group
The Indian Ocean Rim Association Academic Group
The South African Marine Resource Exploration Forum (SAMREF) project leader, a deliverable of Operation Phakisa
NRF rated funding and Professional Development Positions funding.
Science lead for SEAmester, South Africa's floating University

Honorary/concurrent positions and steering Committees

Honorary/concurrent positions

2018-current: Associate Professor at UCT

2018 – CLIVAR/GOOS Indian Ocean Regional Panel member

2017 – co-editor: Frontiers in Marine science, Best practices in ocean observing

2017-current: Joint Commission for Oceanography and Marine Meteorology (JCOMM)

Observation Coordination Group, Vice chair: Standards and best practices

IODE Ocean Best Practices Working Group

Indian Ocean Rim Association Academic group SA Chair

2014-current: Honorary Research Associate at NMU

2012-2017: Honorary Research Associate at UCT

2010-2016: GCOS (Global Climate Observing System) steering Committee

2010-2013: SCOR working group 136: The Climatic importance of the Greater Agulhas

Current.

2007-current: Professional Natural Scientist, SA Council for Natural Scientific Professions.

1012-2013: Southern African Data Centre for Oceanography, Chair and Steering Committee member

2008-2013: Agulhas Somali Current Large Marine Ecosystem – South African Data and Information Coordinator.

2007: Claude Leon fellowship, University of Cape Town

2005-2007: Indian Ocean research fellow, University of Cape Town: Using a Regional Ocean Model, ROMS to investigate the Indian Ocean thermocline ridge.

2004-current: Courses and *ad hoc* lectures in climate variability and ocean circulation (Masters, honours, undergraduates). Included writing lectures and exams, as well as scientific advisor/mentor to PhD and masters students including aiding students with Matlab, modelling and thesis writing.

2001-2002: DEIMEC (Dynamics of eddies impact on Marion Islands ecosystem) cruise, S.A. Agulhas V104; St Helena Bay monitoring Line (SHBML) and SARP line **2000:** Environment Agency, U.K. Water Quality Consenting Technical Assistant.

2000: Research assistant, Institute Française de Recherche et Etudes de la MER

Research expertise and skills

- Experience with developing, coordinating and managing national, regional and international long term ocean observation and modelling programs; cruise planning, experienced proposal writing, project and fund management, reporting finances, budgets and business plans, human resources, staff management.
- Extensive international collaborations and workshop experience, running scientific workshops, courses and international conferences (including Chapman Conference).
- Experience in capacity development across regions, cultures and varying skillsets
- Experience with different ocean models, including ROMS (running), AGAPE (running), ORCA (research) and OFES (research). Excellent knowledge of Matlab programming and Linux environment, basic fortran (need refreshing).
- Extensive experience of *in situ* observational, satellite and reanalysis data, as well as considerable research using climate data and analysis, statistical methods and interpretation skills using, amongst others, EOF and wavelet analysis, Ocean Data View.
- 45 days scientific cruise ship time, handling a variety of oceanographic equipment (CTD, XBT, DOC, SPMR, Chlorophyll, nutrients etc) whilst at sea.
- Experience in presenting, lecturing, public speaking, supervising undergraduate and postgraduate students and interns and working with learners and educators. Also numerous science communications and popular articles, explaining science to the public and general outreach and communication
- Experience in working in a multi-disciplinary, multi-institutional, multi-cultural environment covering marine offshore and coastal oceanography, physical, biological and benthic.
- Experience with different databases
- Fluent in French (spoken, written, reading).
- Numerous management courses (Strategic management, HR, finance, job evaluation, transformation and diversity in leadership, conflict resolution)

Publications - International and national

NB – In cases of student publications where relevant, if I am not second author, I am last author following the convention of leader of group – design and set up of research project, student supervision, and significant contribution to science and write up.

In review

- Morris, et al, (under revision, JGR) Lagrangian evolution of two Madagascar cyclonic eddies: vertical structure, eddy properties and fluxes

Published

- Hermes, J., Masumoto, Y. et al (2019) A sustained ocean observing system in the Indian Ocean for climate related scientific knowledge and societal needs. *Frontiers in Marine Science* . 6(355), DOI: 10.3389/fmars.2019.00355
- Pinardi et al (2019) The Joint IOC (of UNESCO) and WMO Collaborative Effort for Met-Ocean Services. *Frontiers in Marine Science*, <https://doi.org/10.3389/fmars.2019.00410>
- D'Hotman, Malan, N., Collins, C. de Vos, M. Lumpkin, R., Morris, T., Hermes, J. (2019) Oceans Using a jet reference frame to target drifter deployments in the Agulhas Current. *JGR – Oceans*. DOI: 10.1029/2018JC014850
- Veitch, J.A., Rautenbach, C., J. Hermes and C. Reason (2019): The Cape Point wave record, extreme events and the role of large-scale modes of climate variability. *J Mar Sys*. 198(103185). DOI: 10.1016/j.jmarsys.2019.103185
- Rapolaki, R, Blamey, R. Reason, C., Hermes, J. (2019). A classification of synoptic weather patterns linked to extreme rainfall over the Limpopo River Basin in southern Africa. *Climate Dynamics*. <https://doi.org/10.1007/s00382-019-04829-7>
- Pearlman, J. et al (2019). Evolving and Sustaining Ocean Best Practices and Standards for the Next Decade. *Frontiers in Marine Science*. 6:277. doi:10.3389/fmars.2019.00277
- Vermeulen, E., Backberg, B., Hermes, J. Ellipot, S. (2019). Investigating the relationship between volume transport and sea surface height in a numerical ocean model. *Ocean Science*, <https://doi.org/10.5194/os-2018-117>
- Malan N., Durgadoo J., Biastoch A., Hermes, J., Reason C.J.C. (2019), Multidecadal wind variability drives temperature shifts on the Agulhas Bank. *JGR*, <https://doi.org/10.1029/2018JC014614>
- Dilmahamod, A., P. Penven, B. Gonzalez, C. J. C. Reason, J. Hermes (2019), A new definition of the South-East Madagascar Bloom and analysis of its variability. *JGR* , <https://doi.org/10.1029/2018JC014582>
- Collins, C. and Hermes, J. (2019); Modelling the accumulation and transport of floating marine micro-plastics around South Africa, *Marine Pollution Bulletin*, 139, 46-58, <https://doi.org/10.1016/j.marpolbul.2018.12.028>
- Hutchinson, K., P. Penven, L. Beal, I. Ansorge, J. Hermes (2018): Sensitivity of the Agulhas Current Seasonality to Rossby Wave propagation Speed, *JGR* <https://doi.org/10.1029/2018JC014319>.
- Veitch, J.A., J. Hermes, T. Lamont, P. Penven and F. Dufois (2018): Shelf-edge jet currents in the southern Benguela: a modelling approach, *Journal of Marine Systems*, 188, pp.27-38 doi: 10.1016/j.jmarsys.2017.09.003
- Krug, M., S. Swart and J. Hermes (2018), Ocean gliders ride the research wave in the Agulhas Current, *Eos*, 99, <https://doi.org/10.1029/2018EO100105>.

- Malan, N., B. Backeberg, C. J. C. Reason, A. Biastoch, J. Hermes (2018): Agulhas Current Meanders facilitate shelf-slope exchange on the Eastern Agulhas Bank, JGR, DOI: 10.1029/2017JC013602
- Dilmahamod, A., B. Gonzalez, P. Penven, C. J. C. Reason, J. Hermes (2018): The SIDDIES corridor: A major pathway of long-lived surface and subsurface eddies in the subtropical South Indian Ocean, JGR <https://doi.org/10.1029/2018JC013828>
- Hermes, J., J. Pearlman, and P. L. Buttigieg (2018), What's the best way to responsibly collect ocean data?, *Eos*, 99, <https://doi.org/10.1029/2018EO096533>
- du Plessis, N., Hermes, J., Bohler-Muller, N., Toit, T. Du, Hachigonta, S., Maanda, F., ... Masoka, C. (2018). The proposed institutional reform of the Indian Ocean Rim Academic Group. *Journal of the Indian Ocean Region*, 14(2), 230-236. doi:10.1080/19480881.2018.1476119
- Bushnell, M., Buttigieg, P.L., Hermes, J., Heslop, E., Karstensen, J., Muller-Karger, F., Mas, C.M., Pearlman, F., Pearlman, J., Simpson, P., (2018) Sharing best practices among operators and users of oceanographic data: Challenge, status, and plans of the ocean best practices project. *Marine Technology Society Journal* (52), 3, pp. 8-12
- Morris, T., Hermes, J., Beal, L., Du Plessis, M., Rae, C. D., Gulekana, M., Lamont, T., Speich, S., Roberts, M., Ansorge, I. J. (2017). The importance of monitoring the Greater Agulhas Current and its inter-ocean exchanges using large mooring arrays. *South African Journal of Science*, 113(7-8), [#0330]. DOI: 10.17159/sajs.2017/20160330
- Ansorge, I. J. et al, (2016) SEAmester – South Africa's *first* class afloat, *South African Journal of Science*, Vol 112, num9/10
- Holton, L., J. Deshayes, B. Backeberg, B. Loveday, J. Hermes, C. Reason (2016): Spatio-Temporal characteristics of the Agulhas leakage: a model inter-comparison study, *Climate Dynamics* doi:10.1007/s00382-016-3193-5
- Collins, C., J. C. Hermes, and C. J. C. Reason (2016): First dedicated hydrographic survey of the Comoros Basin, *J. Geoph. Res. Oceans*, 121, doi:10.1002/2015JC011418.
- Dilmahamod, F. J. C. Hermes; C. J. Reason (2015). Chlorophyll-a variability in the Seychelles-Chagos Thermocline Ridge: Analysis of a coupled biophysical model. *J. Marine Sys*, doi: 10.1016/j.jmarsys.2015.10.011
- Collins, C., J. C. Hermes and C. J. C. Reason (2014). Mesoscale activity in the Comoros Basin from satellite altimetry and a high-resolution ocean circulation model. *J Geophys Res*: 10.1002/2014JC010008
- Collins, C., Reason, C. J. C. and Hermes, J, **2012** *J. Geophys. Res.*, 117, C03045, doi:10.1029/2011JC007531. Scatterometer and re-analysis wind products over the western tropical Indian Ocean
- Beal, L., W. P. M. De Ruijter, A. Biastoch, R. Zahn, M. Cronin, **J. Hermes**, J. Lutjeharms, G. Quartly, T. Tozuka, S. Baker-Yeboah, T. Bornman, P. Ciopollini, H. Dijkstra, I. Hall, W. Park, F. Peeters, P. Penven, H. Ridderinkhof, J. Zinke, **2011** *Nature*, Vol 472, p. 429-436. On the role of the Agulhas system in ocean circulation and climate.
- Billaney, W. T. B, S. Swart, J. C. Hermes, C. J. C. Reason, **2010** *Journal of Marine Systems*, Vol 82 issue 4, pg 304-310. Variability of the Southern Ocean Fronts at the Greenwich Meridian.
- Hermes J. C. and C. J. C. Reason, **2009**: The sensitivity of the Seychelles-Chagos Thermocline Ridge to large scale wind anomalies, *Journal of Marine Sciences*, doi: 10.1093/icesjms/fsp074, pp1-12.

- Hermes J. C. and C. J. C. Reason, **2009**: Variability in sea surface temperature and winds in the tropical southeast Atlantic Ocean and regional rainfall relationships. *Int. J. Clim.*, **29**, 11-21
- Hermes J. C. and C. J. C. Reason, **2008**: Annual cycle of the Tropical Indian Ocean (Seychelles-Chagos) thermocline ridge in a regional ocean model. *J. Geophys. Res.*, doi: 10.1029/2007JC004363.
- Hermes J. C., C.J.C. Reason and J.R.E. Lutjeharms, **2007**: Modelling the variability of the source regions of the Agulhas Current System. *J. Clim.* **20**, 3131-3146.
- Hermes J.C. and C.J.C. Reason, **2005**: Ocean model diagnosis of interannual co-evolving SST variability in the South Indian and Atlantic Oceans. *J. Clim.* **18**(15), 2864–2882.
- Reason, C.J.C., J.R.E. Lutjeharms, J. Hermes, A. Biastoch, R.E. Roman, **2003**: Inter-ocean fluxes south of Africa in an eddy-permitting model. *Deep-Sea Res. II* **50**, 281-298.
- Froneman P.W., I.J. Ansorge, L. Vumazonke, K. Gulekana, A.M. Webb, W. Leukes, C.M. Risien, S. Thomalla, K. Bernard, J. Hermes, M. Knott, D. Anderson D, N. Hargey, M. Jennings, J. Veitch, J.R.E. Lutjeharms, C.D. McQuaid, **2002**: Physical and biological variability in the Antarctic Polar Frontal Zone: Report on the research cruise 104 of the *M.V. S.A. Agulhas*. *S. A. J Science*, **98**, 534-535.

Publications - book chapters/reports

- du Plessis, N., Hermes, J. and K. Findlay, 2018: Oil and Gas Exploration and Production in the Indian Ocean Region, Book chapter for Blue Economy handbook of the Indian Ocean, Editors: V. N. Attri and N. Bohler-Muller. ISBN:978-0-7983-0518-1
- Reflections on the state of research and technology in South Africa's marine and maritime sectors, 2014: Long Term Marine Research Platforms of the National Research Foundation, T. Bornman, L. Atkinson, A. Bernard, P. Cowley, S. Deyzel, W. Goschen, A. Götz, J. Hermes, W. Hugo, A. Paterson, C. von der Meden, Editors: Nikki Funke, Marius Claassen, Richard Meissner and Karen Nortjie, ISBN 978-0-7988-5617-1 <http://www.waternet.co.za/aquarius/book.html>,
- Long-Term Adaptation Scenarios Flagship Research Programme (LTAS) for South Africa. Climate Change Implications for Marine Fisheries in South Africa, 2013. Department of Environmental Affairs Pretoria, South Africa. Editor and scientific contributor.
- Insights into impacts of climate change on the South African marine and coastal environment, James, N and Hermes, J (2011), SAEON, SAIAB and SANBI South African marine contribution to the IPCC –co- editor and co-author
- Bernard, K. S., W. S. Goschen and J. C. Hermes (2011). Climate change and coastal upwelling: Potential implications for South African marine resources. Section 4: States and trends in the aquatic environment. In: *Observations on Environmental Change in South Africa*. Zietsman, L. (ed.) Sun Press, Stellenbosch. pp. 233-237.
- Reason, C. J. C. and J. Hermes (2011). Climate Change and Variability in Southern Africa and Regional Ocean Influences; Observations on Environmental change in South Africa, Zietsman L. (ed.) Sun Press, Stellenbosch
- Hermes, J and Reason, C. J. C. (2011). Climate change impacts on South Africa, in Insights into impacts of climate change on the South African marine and coastal

environment, (eds., N. James and J. Hermes), Pretoria, South African Environmental Observation Network (SAEON): pp. 85-100.

- Reason, C. J. C., J. Hermes, A. Singleton, J.R.E. Lutjeharms, 2003: Modelling Variability in the South West Indian Ocean and its influence on South Africa's Climate. Water Research Commission Report number 868/1/03.
- 2007-2014, Numerous popular articles in the SAEON Newsletter.

Publications – other

- Morris T, Hermes J, Ansorge I, Du Plessis M and d'Hotman J (2016). Bounded by oceans. *Quest*, 12(2):36-37.
- The Second International Indian Ocean Expedition (IIOE2), A basin wide research program, Draft Science plan, Hood, R. R. et al,
- M. Roberts, A. Share, A. Johnson, G. Brundrit, J. Hermes, T. Bornman, I. Ansorge, J. Stander, D. Vousden, H. Valentine and M. Roussouw, 2011. The Grand Challenge of Developing *in situ* observational Oceanography in South Africa *Proceedings of the Joint Nansen-Tutu Scientific Opening Symposium & OceansAfrica Meeting*, Nansen-Tutu Centre for Marine Environmental Research, Cape Town, South Africa, July 2011.
- Masumoto, Y., W. Yu, G. Meyers, N. D'Adamo, L. Beal, W.P.M. de Ruijter, M. Dyoulgerov, J. Hermes, T. Lee, J.R.E. Lutjeharms, J.P. McCreary, Jr., M.J. McPhaden, V.S.N. Murty, D. Obura, C.B. Pattiaratchi, M. Ravichandran, C. Reason, F. Syamsudin, G. Vecchi, J. Vialard, and L. Yu (2010): Observing systems in the Indian Ocean. In *Proceedings of the "OceanObs'09: Sustained Ocean Observations and Information for Society" Conference (Vol. 2)*, Venice, Italy, 21–25 September 2009, Hall, J., D.E. Harrison, and D. Stammer, Eds., ESA Publication WPP-306.
- Hermes, J., C. J. C. Reason, J. R. E. Lutjeharms, **2006**: Modelling the variability of the Greater Agulhas Current System. *CLIVAR Exchanges* **39(11)**, 4.
- Hermes, J., C. J. C. Reason, **2006**: Modelling the variability of the Greater Agulhas Current System. Extended abstract, ICSHMO.
- Hermes, J., **2005**: Ocean model diagnosis of variability in the South Indian Ocean. Ph.D. Thesis.
- Hermes, J., C.J.C. Reason, J.R.E. Lutjeharms, **2002**: Inter-ocean fluxes south of Africa in an eddy-permitting model. *CLIVAR Exchanges* **25(7)** 3/4.
- Hermes, J. **2000**: Small-scale variability of the wind, in the lee of strong topographic features and its effect on ocean circulation. M.Sc. Thesis.
- Chavanne, C., J. Hermes, P. Flament, **2000**: Small-scale variability of the wind, in the lee of strong topographic features and its effect on ocean circulation. *CERSAT News*.
- Hermes, J. **1998**: The alternative oxidase pathway in the Tobacco plant. B.Sc. Thesis.
- Hermes, J. **1997**: Un régime de reproduction andromonoïque des plantes chez *Lloydia serotina*. B.Sc. Year abroad project.

Public outreach

- SAFM and community radio interviews
- Presentations to communities/schools/general public
- Numerous newsletter articles in SAEON eNews and SAEON annual report
- SANCOR newsletter articles

Memberships and Reviews

- **Scientific Committee for the 9th WIOMSA Symposium**
- **Scientific Committee for the International Indian Ocean Expedition, IIOE – 2**
- **WRC Reference Group** – Quantification of uncertainty in weather and climate prediction and its effective communication for better decision making
- **South African SCOR** committee
- **DBCP capacity building technical task group**
- **OceanSAfrica technical task group** member
- **Nansen-Tutu Operational Oceanography Centre Board** member
- **External examiner, University of Cape Town, 2012**
- **MCEN** (Marine and Coastal Educators Network)
- **WIOMSA** (Western Indian Ocean Marine Science Association)
- **SASAS** (South African Society for Atmospheric Sciences)
- **IMBER** Member of the Capacity Building task team
- **SANBI** South African National Biodiversity Institute, steering committee for monitoring and biodiversity
- **SANCOR** South African Network for Coastal and Ocean Research steering committee (2011-2015)
- **MA-RE Marine Research Institute** steering committee
- **South African representative for Argo, 2010-2012**
- **PIRATA** *Prediction and Research Moored Array in the Tropical Atlantic SE Atlantic Extension* steering committee.
- Various roles and advisory positions within capacity building, in particular regarding modelling in the SW Indian Ocean
- Numerous scientific organizing committees and abstract reviews for conferences (ICSHMO, WIOMSA, SAMSS, SASAS)
- Reviewer for the Journal of Climate, Journal of Geophysical Research, Deep Sea Research, Climate Dynamics and African Journal of Marine Sciences.
- Reviewer for the National Science Foundation (NSF, USA)
- Reviewer for South African National Research Foundation (various panels and postal reviews)
- Thesis examiner for numerous UCT thesis
- Public outreach through education program

Conferences and workshops organised

- 2019: WIOMSA co-convenor** –Transdisciplinary research and IORA; Ocean modeling for Africa
Strengthening Ocean Observing in Africa
- 2018: The Agulhas System Climate Array symposium**, South Africa
- 2018: Co-chair of the SAEON Science meeting panel**, South Africa
- 2018: Indian Ocean Dialogue and IORAG meeting**, Durban, South Africa
- 2018: Ocean Best Practices WG meeting**, Majorca, Spain
- 2017: SAEON Science meeting**, South Africa
- 2017: Special session WIOMSA for IORA**, Tanzania

- 2017: Community consultation workshop on Best Practices in Ocean Observing Systems**, Paris, France
- 2017: IORA academic group meeting**, Durban South Africa
- 2017: Co convenor for IIOE2 session at IUGG and LOC**, South Africa
- 2016: Agulhas System Climate Array scientific and technical workshop**, South Africa
- 2015: First SA National GCOS science day and hosted GCOS SCM**, South Africa
- 2015: Agulhas System Climate Array launch**
- 2014: Agulhas System Climate Array scientific and technical workshop**
- 2014: Agulhas System Climate Array planning workshop**
- 2013/2014: False Bay Conference steering committee** A number of workshops around this planned conference, delayed to 2015 due to maternity leave
- 2013: SANCOR Western Cape/Northern Cape Student workshop**
- 2012: American Geophysical Union Chapman Conference: the Agulhas System and Its Role in Changing Ocean Circulation, Climate, and Marine Ecosystems**, local organiser, co-chair, invited introductory talk, co-author on 2 posters.
- 2011: SCOR capacity building workshop in Mauritius and DBCP Model Development Team coordinator and lecturer:** coordinated activities with the DBCP, obtained funding for attendance of regional scientists, coordinated modelling and observational group workshops and SCOR workshop, wrote final reports and recommendations
- 2010: WIO Scientific Committee to work with SCOR working group:** set up this committee to work with the SCOR group and to facilitate the workshop and meeting in East Africa in 2011
- 2011: Agulhas Somali Current Large Marine Ecosystem Marine Ecosystem Diagnostic Analysis workshop** around the Transboundary Diagnostic Analysis
- 2010-2012: Southern Hemisphere Conference on Meteorology and Oceanography** part of the Program organising committee for the 2012 meeting
- 2010: WIO-DBCP capacity building workshop** led the modeling component.
- 2009: A week long ocean modelling and Indian Ocean climate variability workshop as part of the project:** Assessment of Climate Variability Impacts on Coastal Communities of East Africa (P.I.). Attended by 7 SE African scientists and a further 10 students from UCT.
- 2008: Young African Scientist session** at the IGBP (joint organiser), Cape Town. Co-convenor of the session, included logistics, inviting and selecting abstracts and ensuring the smooth running of the session.
- 2008: SAMSS**, Cape Town: Scientific steering committee.

Grants and awards

- 2017: ESASTAP funding for modeling of the Agulhas Current**
Travel grant for EGU
- 2016: PDP grant for postdoc in Benguela ecosystems and Phd in ocean/atmosphere**
- 2016: Travel grant for glider exchange**
- 2015: National Equipment training grant** support for ASCA workshop
- 2014: Developing coastal ocean modeling in South Africa: Y-rated scientist funding**
National Equipment training grant support for ASCA workshop

Modelling the Madagascar bloom: collaborator

2013: Agulhas System Climate Array 5 year support grant from DST/NRF

2013: Professional Development Program (PDP) PhD and Postdoc Grant for coastal modeling and PDP PhD Agulhas offshore-inshore interaction

NRF Incentive funding for MSc research

ONR grant for investigating global operational models ability to represent salient ocean features around South Africa

KIC grant for international ASCA workshop

Strategic Research Infrastructure Grant for ASCA and additional Algoa Bay equipment

2012: SA/Angola bilateral grant: PI, Where two currents meet: Oceanographic processes within the Angola-Benguela Frontal Zone, using models and *in situ* data.

2012: US Office of Naval Research Grant Supporting regional science at the Chapman Conference

2012: Rated Researcher funding

2012: Professional Development Program Offshore benthic long-term monitoring and research of the Algoa Bay sentinel site, co PI

2011: US Office of Naval Research Grant supporting regional science at the DBCP and SCOR working group meeting.

2011: Strategic Research Infrastructure Grant for oceanographic equipment for Algoa Bay Sentinel Site and an offshore benthic camera

2010: SATREPS: Co-investigator on “**Prediction of Climate Variations and its Application in the Southern African Region**”. **2009:** BCC Data and information grant with CSIR

2009: Nairobi Convention Clearing House Mechanism grant to implement and maintain SA’s Clearing House

2008: WIOMSA/MAMSA grant – ‘Is there a western Indian Ocean coral triangle? Co-investigator. PI – David Obura of CORDIO, Kenya.

2008: POGO/SCOR visiting fellowship – spent 1 month at the Bermuda Institute of Ocean Sciences, during this time I interacted with scientists from different oceanographic disciplines and forged relationships with scientists from various countries. I gave lectures as part of the POGO course and spent time at sea, learning about observing all aspects of the ocean (physical, chemical and biological) as well as supervising the students at sea.

2008: Co-P.I. ACEP (African Coelacanth Ecosystem Programme) – An integrated, web-based data and metadata system, using Geographic Information Systems (GIS) to understand biophysical processes.

2007: Co-investigator, SANAP SNA200631500002 – Antarctic impacts on South African climate.

2007: START/PACOM award - Assessment of Climate Variability Impacts on Coastal Communities of East Africa.

2007: Claude Leon Foundation fellowship

2005-2006: India-South Africa bilateral funding. P.I. Prof. Chris Reason

2001-2005: Water Research Commission. P.I. Prof. Chris Reason

[Students and interns NB 4 of my graduated PhDs and 1 MSc now hold posts overseas. Students from UCT unless stated otherwise](#)

2019 graduated: 4 MScs - Yotam, distinction, Jethan d'Hotman, Michael Hart-Davies, Tania Moyikwa; **underway PhDs** Ramontsheng Rapolaki, Tammy Morris, Johan Stander, Dylan Bailey (NMU); **MSc** Ruth Farre, Rudzi Silima and Gustav Rautenbach (NMY); **2 Postdocs**, Thulwaneng Mashifane and Laura Braby; **interns**, Tania Moyikwa and Nabsreen Burger; **2018 graduated:** 3 PhDs (Neil, Fehmi, Katherine), Hons, James Maitland; 3 Postdocs, Charine Collins, Jenny Jackson-Veitch and Thulwaneng Mashifane, 2 interns. **2017 graduated:** 2 MSc (Estee Vermeulen and Alice McGrath), 2 interns, Saffiya and Jordan von Stavel; **2016, graduated:** 1 Hons, Tania Moyikwa and 2 interns, Jethan d'Hotman and Fiso Mbatha; 2 Postdocs, Charine Collins and Jenny Jackson-Veitch, **2015**, 1 Postdoc, Charine Collins; **graduated:** 2 MSc (Yuneeda Ooz, Lisa Holton); 4 honours, 2 BTech, 2 DST/NRF interns, Corenelia Nieuwenhuys and Christopher Jacobs; **2014**, 1 Postdoc, Ben Loveday, **graduated:** 4 MSc - Kyle Cooper, Mthetho Sovara, Fehmi Dilmahamad, Blessing Kamwai and 2 Hons - Mark Jacobson and Imke Meyer **2013, graduated** - 1 PhD, Charine Collins and 2 hons - Daniel Schilerport and Amy Oosterban; 1 DST/NRF intern, Amy Weber. **2012**, 1 honours graduated, (Jennifer Butler); **2010:** 1 DST/NRF intern (Caren George); **2009:** 2 MSc students graduated - Charine Collins and William Bilaney

2008 – current SAEON Egagasini has an education program that uses marine science to support the school curriculum at Grades 10 and 11. I manage the education officer running the program and am involved in activities when possible. I directly support learners from Ocean View and Masiphumelele in the marine based Eskom science projects and do school visits with the education office to support our monitoring teams, as well as presenting at marine workshops

Note: Aside from these students, I also manage the professional development students and postdocs in the Node, in disciplines ranging from coastal oceanography through to benthic biodiversity. I also mentor Postdocs and staff in supervising their own students.

Lectures

Advanced Marine Science MSc: Oceanography for biologists

Oceanography Honours: Climate analysis and statistics

Postgraduate courses, summer schools and dedicated workshops on Matlab and Regional Ocean Modelling

Undergrad lectures - Southern Hemisphere oceanography, fluid dynamics, ocean climate

Conferences and workshops (not listed - co-authorship presentations which I didn't attend but these range from about 3 per year internationally)

2019: WIOMSA, Mauritius: 2 special sessions – Transdisciplinary research (presentation on science to society); Ocean modeling for Africa, chaired session and co convenor

Commonwealth action group on Ocean observations, Canada

JCOMM OCG, Jakarta Indonesia

IORP/IIOE2, PE South Africa

2018: Ocean Best Practices workshop, Paris France

CLIVAR IORP and IndOOS review, Indonesia

Belem South-South meeting in Salvador, Brazil

JCOMM OCG9, Brest, France

- OBPWG, Majorca**
- 2017: OBPWG community outreach meeting, Paris France**
GOOS RA, Singapore
IUGG, IAPSO Cape Town, co-author on 9 presentations;
JCOMM OCG, China
Belem South-South meeting, Portugal
SAMSS, Port Elizabeth, co-author on 3 presentations and 1 poster
- 2016: Benguela symposium (steering committee member), Cape Town, co-author on 2 papers and 1 poster**
SASAS, Cape Town, co-author on paper which won best presentation
Indian Ocean Dialogue, Indonesia
GCOS SCM, Ecuador
- 2015: Diversity workshop, Pretoria**
Indian Ocean Rim Countries Academic Group, Indonesia
Mexico/South African bilateral meeting, Mexico
- 2014: Limited meetings due to pregnancy:**
DST Global Change conference, Port Elizabeth, Presentation on ASCA
Indian Ocean Rim Countries Academic Group, Pretoria
International Indian Ocean Expedition II science planning, Bremen (via Gotomeeting)
DST Marine strategy meetings
- 2013: DST NASA planning workshop, Pretoria, South Africa**
Indian Ocean Rim Countries Academic Group, Perth, Australia.
Indian Ocean Rim Association for Regional Cooperation – Meeting of Ocean Forecasting Officials to build capacity to progress, validate and apply Indian Ocean Forecasting systems, Perth, Australia (AusAid, IOR-ARC funding)
GCOS Steering committee meeting, Germany
GFCS workshop, Pretoria, South Africa
POGO 14 Annual meeting Nansen-Tutu Centre for operational oceanography meeting
- 2012: Due to pregnancy I was unable to attend the following meetings, however I participated by written input: Southern Hemisphere Conference on Meteorology and Oceanography, co-chair of 2 sessions; IMBER workshop - Needs assessment for capacity development for integrated marine biogeochemistry and ecosystem research in the Asia-Pacific region; Data Buoy Cooperation Panel Capacity building workshop; Modelling for ocean forecasting and process studies and Indo-Pacific Oceanography Reference group; IBSA 3rd ocean workshop**
- 2011: Global Climate Observing System Steering Committee meeting, UK**
- 2011: Argo Steering Team meeting, Argentina, presentation on education program using Argo**
- 2011: ACCESS early career scientist workshop: presentation on current and future marine activities in South Africa**
- 2011: SCOR working group meeting, Mauritius**
- 2011: 2nd Data Buoy Cooperation Panel workshop on capacity building in the Indian Ocean, Mauritius**

- 2010: SATREPS project** - Tokyo, Japan. 1 week as visiting research scientist at JAMSTEC. International Symposium “Roles of the Indo-Pacific Oceans in Climate Change and Variability in Commemoration of the 50th Anniversary of the IOC/UNESCO” Presentation: Climate variability in the southern Indian Ocean motivation, observation and modeling.
- 2010: Financial management** Cape Town.
- 2010: Regional ASCLME technical coordination meeting**, Kenya.
- 2010: Capacity Building for Ocean Science**, Germany. SCOR international meeting to form a cohesive approach to ocean science capacity building
- 2010: Trilateral Sub Global Assessment workshop**, Pretoria
- 2010: SCOR working group meeting and Ocean Sciences**, Portland, Oregon. Part of the SCOR working group on the Climatic importance of the Greater Agulhas Current, first working group meeting.
- 2010: Data Buoy Cooperation Panel** workshop on capacity building for the SW Indian Ocean, South Africa
- 2010: POGO11 (Partnership of Observations of Global Oceans)**, Moscow, Japan. Representing the SA marine Community.
- 2009: Climate change workshop and Japan/South Africa project development**, Tokyo, Japan. Presentation: Variability in the Oceans around southern Africa, a South African perspective.
- 2009: Norway/South Africa** climate change workshop, Cape Town. Presentation on SAEON
- 2009: WIOMSA MASMA Grant holders meeting**, Tanzania. Progress report on WIOMSA project.
- 2009: OceanObs’09, Venice**: Monitoring and researching Oceans around Southern Africa, poster, as well as input into white papers. Full sponsorship from WMO.
- 2009: ASCLME and WIOMSA, Reunion** attended the country working group meeting for the ASCLME and the WIOMSA symposium
- 2009: IBSA Antarctica I, Brazil** report on the South African Southern Ocean activities
- 2009: ACCESS Operational oceanography workshop**: Session chair for ocean modeling.
- 2009: India/Brazil/South Africa IBSA – Oceans workshop**, Goa, India; represented the South African physical oceanography component.
- 2009: Monitoring Climate change impacts, a Southern Ocean Sentinel Program**, Hobart, Tasmania.
- 2009: Workshop of the SW Indian Ocean**, Kiel, Germany. Scorer working group proposal put together, member of the potential working group.
- 2008: The ASCLME Regional Meeting of Technical Coordination Groups and the ASCLME Regional Project Coordination Forum**, Mauritius
- 2008: Marine and Coastal Educators Network** Invited speaker
- 2008: The Southern African Marine Science Symposium (SAMSS)**, Cape Town, South Africa. Monitoring the coastal and offshore waters around southern Africa, plenary talk. Chair: studies off the west coast of southern Africa.
- 2008: Effects of climate change on the world’s oceans, international symposium**, Gijon, Spain. Full support from WCRP. Oral presentation on, ‘The Seychelles-Chagos thermocline ridge’ and poster presentation, ‘the marine nodes of SAEON’.

- 2008: IGBP, represented the International Union of Geodesy and Geophysics**, Cape Town. Full support from Start. Invited presentation 'The Seychelles-Chagos thermocline ridge'.
- 2008: CLIMECO workshop – interaction between the physics and biogeochemistry of the oceans**, Brest, France. Full support from IMBER. Poster presentation on, 'The Seychelles-Chagos thermocline ridge'.
- 2008: 1st Southern African SOLAS/IMBER International Science Meeting**, Cape Town. Presentation on SAEON
- 2008: Workshop to assess the impacts of climate change on Madagascar's biodiversity and livelihoods**, Anatanarivo, Madagascar. Invited plenary presentation (WWF): Oceanography and climate change for Madagascar.
- 2007: GEO ministerial Summit** Launch of the Egagasini node
- 2007: WIOMSA** (Western Indian Ocean Marine Science Association), Durban. Introduction to SAEON, poster.
- 2007:** A roundtable discussion with Sir David King on climate change in South Africa
- 2007: SANBI** (South African National Biodiversity Institute) workshop on marine biodiversity.
- 2007: SANAP workshop**, Stellenbosch
- 2007: SAGRADEX workshop** (South African Gradients Experiment).
- 2007: Africa climate research networking workshop for young scientists**, in conjunction with the 28th session of the Joint Scientific Committee for the World Climate Research Programme, Zanzibar. Invited poster presentation.
- 2006: Coastal ocean modeling** summer school, Toulon, France.
- 2006: LOW oxygen variability** and its consequences in the Southeast Atlantic- Benguela Ecosystem, workshop, Cape Town.
- 2006: 8th ICSHMO** (International Conference of Southern Hemisphere Meteorology and Oceanography), Brazil. Modelling the variability of the Greater Agulhas Current System (oral presentation). Full support from AMS.
- 2005: XBT workshop**, invitee, Goa, India.
- 2005: WIOMSA** (Western Indian Ocean Marine Science Association), Mauritius. Ocean model diagnosis of variability in the South Indian Ocean (oral presentation). Full support from WIOMSA.
- 2005: Dynamic Planet**, Australia. Ocean model diagnosis of variability in the South Indian Ocean (oral presentation). Full support from IAG/IAPSO/IABO
- 2005: SAMSS** (South African Marine Science Symposium), South Africa. Inter-ocean exchange and variability in the South Indian Ocean (oral presentation)
- 2005: Physical oceanography dissertation symposium (PODSIII)**, invitation, Hawai'i. Ocean model diagnosis of variability south of Africa (40 min oral presentation); chair of session; multi-disciplinary research, problems and solutions (oral presentation and workshop). Full support from NSF/NASA/ONR/NOAA.
- 2005: European Geophysical Union (EGU)**, Austria. Inter-ocean fluxes south of Africa in an eddy-permitting model (poster presentation). Full support from NWO/NFR.
- 2004: CLIVAR 2004**, USA. Interannual variability in the South Indian and South Atlantic Oceans (poster presentation). Full support from UCAR, unable to attend due to accident.
- 2004: SASAS** (South African Society for Atmospheric Sciences), South Africa.

Interannual variability in the South Indian and South Atlantic Oceans (poster presentation).

2003: SASAS, South Africa. Variability in the South Indian Ocean (oral presentation).

2005: International Union of Geodesy and Geophysics (IUGG), Japan. Variability in the South Indian Ocean (oral presentation). Full support from IUGG.

2002: Workshop on South African and German activities in the Southern Ocean, Alumni House, UCT, South Africa.

2002: SASAS, World Summit, South Africa. Interocean fluxes south of Africa (oral presentation).

2002: SAMSS (South African Marine Science Symposium), Namibia (poster).

2001: SASAS, South Africa. Mechanisms causing sea surface temperature variability in the South Indian Ocean. Most outstanding poster award.

2001: SANCOR (SA Network for Coastal and Oceanic Research), Workshop.

Referees

A number of referees are listed depending on the particular aspects of my career.

National and international Collaborators

Emeritus Prof Geoff Brundrit
Retired, UCT
South Africa

oceangeoff@iafrica.com

Prof Isabelle Ansorge

HoD, Oceanography Department, UCT
South Africa

Isabelle.Ansorge@uct.ac.za

Dr Angus Paterson, Director

SA Institute for Aquatic Biodiversity

South Africa

a.paterson@saiab.ac.za

Dr Julie Deshayes, Manager of NEMO R&D

team, LOCEAN-IPSL, CNRS Research Scientist
France

julie.deshayes@locean-ipsl.upmc.fr

International Working group colleagues

Dr Nick d'Adamo

Head - Perth Programme office, IOC of UNESCO

Host agency: Commonwealth Bureau of Meteorology,

1 Ord Street, West Perth 6005, Western Australia.

Ph +61-(0)8-92262899 (mobile) +61 (0)409 680247

nick.dadamo@bom.gov.au

Dr Emma Heslop

GOOS and JCOMM

IOC, Paris

e.heslop@unesco.org

Dr David Legler

NOAA, Director, Ocean Observing and Monitoring

Division, United States of America

david.legler@noaa.gov

Current Employer

Mr Johan Pauw Director, SAEON

SA Environmental Obs. Network

Tel +27-12-392-9383

johan@saeon.ac.za

PhD and Postdoc supervisor

Prof. Chris Reason,

University of Cape Town

Tel +27-21-650-5311

chris.reason@uct.ac.za

Research interests

The main focus in my position is project leadership with a trans-disciplinary approach to marine science, strategic and project development, regional and international collaborations and capacity development. Much of this has been driven from working in such a diverse country, both culturally and scientifically. But also driven through my experiences with the ASCLME, the DBCP, SCOR/POGO, GCOS and JCOMM.

Through my team we carry out research on an array of topics from benthic biodiversity and habitat mapping, physical oceanography and numerical modeling and air-sea interaction through to, the Blue Economy, the impact of climate change on fisheries and the local ecological knowledge of fishing communities.

I have recently begun work on investigating large scale climate variability on shelf and coastal waters and am leading a major project focused on setting up a coastal modeling hub, with a 5-7 year plan of providing operational forecasts in the coastal environment.

With all modeling work it is important to keep a grasp on reality and there is a constant need for improved observational data to both force and validate models. At the beginning of 2014, I was successful in my efforts to attract funding from the DST for the international project - the Agulhas System Climate Array, providing the first sustained observations of the Agulhas Current. The Array measured volume, salt and heat transport throughout the full depth of the Agulhas Current and up into the coastal waters. Ongoing hydrographic surveys happen on an annual basis through our collaborations with SEAmester, South Africa's floating university.

As part of my current position I have developed strategic and business plans within the SA National Research Foundation and have worked with the Department of Science and Technology to develop the Marine and Antarctic Research Strategy. I have written and managed a number of successful large national and international funding proposals. I strongly believe in growing the next generation of marine and climate scientists in a transformative and inclusive manner and mentoring them to be able to take on lead roles within the community. As part of my group we not only run an incredibly successful outreach, education and communication program, but I have also taken on the initiative of developing the transformation plan within SAEON as a whole. Within southern Africa, there is a need to increase the number of people choosing science as a career path, particularly from previously disadvantaged backgrounds. There has been a considerable amount of work done under my management to utilize marine science to support the curriculum at Grades 11 and 12. We have worked with a number of schools from coastal regions and, over 10 years, built up excellent programs to support both the learners and educators. We maintain contact with those learners in our groups who have passed Matric and assist in their University and funding applications.

SAEON, is also involved in the DST/NRF internship program which provides opportunities for students from all backgrounds to explore many different facets of marine science and the working environment. Arising from the success of the internship program I am currently working on the SAEON transformation strategy. This program is being developed to support a transformation postgraduate at the honours or masters level at

each SAEON node, in a permanent position, allowing them to grow their skills in the workplace and potentially to complete a PhD as part of their position. It is my hope that these people will provide positive role models for younger students and this will have a pyramid effect, increasing the number of PDA students choosing marine science at undergraduate and postgraduate levels.

Personal

I really enjoy lecturing and supervising students and communicating science to a broader community. This enthusiasm and passion for oceanography is evident when I lecture and I enjoy explaining theories in a way that can be applied and understood. At SAEON I provide leadership to a team of scientists and enjoy using my knowledge, networks and experience to help them achieve their goals. I believe diversity is key to a productive, driven and dynamic workplace and I learn new approaches and different ways of looking at things from interactions with my team on a daily basis. My position at SAEON also allows me to interact with learners and teachers through education outreach and awareness and I find this extremely rewarding.

I am a very driven manager and project leader and particularly enjoy oceanography given the constant challenges that arise and the fact that the more you research and discover the more questions there are. Although my work is around earth system science and global change, there is also a key element which focuses on the local oceanography around South Africa and Cape Town and trying to address research questions here in discussion with policy-makers and direct stakeholders, such as the City of Cape Town. Being able to relate research and activities to the public is essential, but difficult.

I find it very important to represent South Africa in the international arena as it is important to ensure that our research, as well as technical and data methods, is of international standards. South African scientists also have a lot of skills and knowledge to offer international programs. I have found, in particular, that sitting on international working groups and committees, in my own capacity and on behalf of South Africa, has grown mine, and the country's, reputation within oceanography. It is important that I am now able to mentor the next generation to take on these roles.

My interest and love of the ocean is not purely work driven, I spend as much free time as possible in the water, surfing, swimming, snorkeling or diving. This is now enhanced by our newest citizen science project using 'smart fins' in place of normal surfboard fins which measure the SST and GPS position whilst surfing.